

# THE AMERICAN PSYCHOLOGIST

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Program—1960 Annual Convention

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# THE AMERICAN PSYCHOLOGIST

Journal of the American Psychological Association, Inc.

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Volume 15

July 1960

Number 7

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# PROGRAM OF THE SIXTY-EIGHTH ANNUAL CONVENTION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

September 1-7, 1960, Chicago, Illinois

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## PAPERS AND SYMPOSIA

### THURSDAY MORNING, SEPTEMBER 1

#### Division 7. Stress and Adjustment

9:00-9:50. Cotillion Room, Morrison

JEROME KAGAN, *Fels Research Institute*, Chairman

9:00. Behavioral correlates of consistent responses to incomplete doll play stories. LEONARD M. LANSKY, *Fels Research Institute*.

Two groups of children, aged 3½-5 and 5-6½, were given three trials with the same set of doll play stories involving conflicts between children. The consistency of the responses and their content, on a rating scale of "maturity," were correlated with observations of school behavior. For the younger children, consistency and IQ were positively correlated with dominance, expression of positive feelings, and language; and negatively correlated with thumbsucking, watching, and withdrawal. These data are contrasted with relationships within the doll play responses in which, for the older children, IQ, lack of consistency, less "mature" responses, and response rate were associated.

9:10. Anxiety, isolation, and reinforcer effectiveness.

RICHARD H. WALTERS AND EDWARD RAY, *University of Toronto*.

Gewirtz and Baer introduced the concept of social drive to account for the increased effectiveness of social reinforcers resulting from the brief social deprivation of young children. Their results could be equally well explained in terms of anxiety-arousal. Forty Grade I and II children were assigned to one of four conditions: anxious-isolated, anxious-nonisolated, nonanxious-isolated, nonanxious-nonisolated. Anxiety was aroused by the use of a noncommunicative stranger as the experimenter's assistant and by

anxiety-arousing communications. Following the experimental treatments, subjects were conditioned by a procedure analogous to that used by Gewirtz and Baer. Results supported the anxiety-arousal theory.

9:20. Disturbances experienced by children in their natural habitat. CLIFFORD L. FAWL, *University of Kansas*.

Disturbances experienced by 12 children during full day, detailed observations were identified and judged as to precipitating conditions. The rate of disturbance varied inversely with the subject's age ( $\rho = -.76$ ). The most common precipitating conditions were: "interference" (hindrance of goal progress owing to external sources), "offending imposition" (nongoal related, intrinsically negative incidents provoked by external source), and "imposed driving force" (goal direction not of the subject's own choosing). The proportion of disturbances caused by "interference" decreased with age ( $\rho = -.82$ ), while that for "offending imposition" increased ( $\rho = .67$ ). The "imposed-driving-force" proportion was not age related. Four other types were identified and analyzed.

9:30. The relation between adult adjustment and early experience over a 28-year interval. JOHN E. ANDERSON, *University of Minnesota*.

Thirty-eight measures and ratings obtained on children between 1925 and 1932, 70 males and 88 females, have been correlated with some 127 measures of personality, attitude, and adjustment on the same persons as adults in 1956. Positive relations appear for sets covering quality of early care, family socioeconomic status, child intelligence, and child health; doubtful relations for sets covering the child's self-reliance and his parents' education; and no relation for sets involving childhood physique, energy, and

sociality. For childhood emotionality the relation is positive for males and negative for females.

- 9:40. Measurement of social adjustment in preadolescent boys. JERRY S. WIGGINS AND C. L. WINDER, *Stanford University*.

This paper describes the construction of a peer-rating instrument that yields objective scores on the variables of aggression, dependency, withdrawal, and depression in preadolescent boys. Items were constructed from judgments of statements elicited in child interviews focused on peers making an inadequate social adjustment. These items were presented in sociometric format to classes of elementary school boys and their teachers. Items were eliminated on the basis of internal consistency, difficulty level, and validity with teachers' ratings. Large scale administration of the revised inventory provided normative information as well as data concerning the psychometric properties of the four scales.

#### Division 8. Symposium: The Effect of the Value of a Reinforcement on Subjective Probability

9:00-10:50. Old Chicago Room, Sherman

FORREST B. TYLER, *Southern Illinois University*,  
Chairman

##### Participants:

FRANCIS W. IRWIN, *University of Pennsylvania*. Relationships between outcome value and strength of expectation as mediated by belief in the ability to control uncertain events.

WARD EDWARDS, *University of Michigan*. Interactions between utility and subjective probability and the variance preference problem.

LAWRENCE W. LITTIG, *University of Buffalo*. Motivation, probability preferences, and subjective probability.

Discussants: JULIAN B. ROTTER, *Ohio State University*; AND R. DUNCAN LUCE, *University of Pennsylvania*.

#### Division 12. Assessing Treatment Outcomes

9:00-10:50. The Assembly, Sherman

LEONARD D. ERON, *Rip Van Winkle Foundation*,  
*Hudson, New York*, Chairman

- 9:00. Prediction of relapse for psychiatric patients. DAVID J. GOUWS, *Western Psychiatric Institute and Clinic, University of Pittsburgh*. (Sponsor, John R. Barry)

In a cross-validation study Feldman's *Ps* MMPI scale—for the prediction of response to shock treat-

ment—was found to discriminate significantly between patients who had, and did not have, a relapse within five years, irrespective of treatment. An Adjustment scale, developed for military personnel, differentiated equally well between the criterion groups. These two scales intercorrelated .84; and, respectively, correlated .65 and .53 with an Acquiescence scale. The possible use of the Acquiescence scale as a suppressor variable was explored. The implications of these data for prognosis of psychiatric patients are discussed.

- 9:10. Two therapist measures of patient change in psychotherapy. DOUGLAS M. McNAIR AND MAURICE LORR, *Veterans Administration, Washington, D. C.*

Two objective scales were developed assessing behavioral changes of psychotherapy patients. A modified critical incident technique was employed during interviews with 50 therapists to obtain a pool of specific patient behavioral changes accompanying psychotherapy. Items were constructed which described specific commonly reported incidents of change. Three scales to measure change were constructed: Interview Relationship Changes (IR), Positive Gains (PG), and Symptom Reduction (SR). These measures were applied as criteria of change in two studies with 133 and 172 psychotherapy patients. In one study, the statements were rated as true and not true. Changes were reported at four-month intervals throughout one year of treatment. The second study utilized patients receiving adjunct chemotherapy, and changes were reported on continuously scaled items at 8 and 12 weeks after beginning psychotherapy. Correlational analyses indicated that PG and SR could be combined into a single measure, while IR was sufficiently independent to be retained as an independent measure. Validity data and reliability data, including a comparison of reliabilities of dichotomous and continuously scaled items, are presented.

- 9:20. Dimensions of personality change with psychotherapy. ROBERT C. NICHOLS AND KARL W. BECK, *Purdue University*.

This study was concerned with two questions: (a) Are personality changes which occur concomitantly with psychotherapy unidimensional so that the effects of therapy can be assessed by any of a variety of criteria, or are they multidimensional requiring a number of criteria for adequate assessment of therapeutic effect? (b) Finding multidimensional changes, which of the change dimensions are affected by the therapy? Factor analysis of 30 change variables including test score changes and therapist and client ratings for 75 cases yielded six factors mainly identified with the various measuring instruments used.



Comparisons with a control group and correlations with number of interviews and rated skill of therapist indicated that the two factors identified by therapist ratings and client ratings were the only change factors affected by the therapy.

- 9:30. A short psychiatric interview scale for evaluating treatment change in schizophrenic patients. DONALD R. GORHAM AND JOHN E. OVERALL, *VA Central Neuropsychiatric Research Laboratory, Perry Point, Maryland.*

Change scores on the individual items of the Lorr MSRPP Scale were intercorrelated, based on a population of 474 patients from 34 VA hospitals in a large scale chemotherapy study. Cluster analysis revealed nine relatively independent factors which could be measured by 18 items. This brief "drug change scale" correlated .94 with the Lorr total morbidity index for 474 acute patients; .93 with total morbidity on a cross-validation sample of 120 chronic patients taking different drugs. The nine subscales show promise for identifying patterns of specific drug effects. A nine-item scale is proposed for future chemotherapy studies.

- 9:40. Changes in self-consistency with and without therapy. ROSALIND DYMOND CARTWRIGHT, *University of Chicago.*

To replicate and extend an earlier study of the effects of psychotherapy on the self-consistency of psychoneurotic patients, 19 therapy cases and 10 no-therapy controls sorted the Butler-Haigh *Q* items three times to describe themselves in their relations to three significant others on two occasions approximately six months apart. The significant decrease in variability of the relationship sortings following therapy found previously was replicated. The increased consistency was more marked for successful than for failure therapy cases. The control subjects also decreased the variability of their sortings significantly. Important differences between changes with and without therapy were discovered.

- 9:50. Factors characteristic of patients responsive to brief psychotherapy. EDWIN S. ZOLIK AND THOMAS H. HOLLON, *Marquette University and Mental Health Clinic, Rockford, Illinois.*

Three groups of patients—those responding to brief psychotherapy, those requiring long term psychotherapy, and those refusing recommended psychotherapy—were compared on 16 dimensions. Results sustain major hypotheses, yielding descriptive patterns. Brief term patients are less defensive, have more insight, less pathology, and the lowest level of

self-esteem of the three groups. Long term patients are intermediate. Nonbeginning patients are the most defensive, least anxious, have the highest self-esteem, but the most overall pathology. Findings reveal a direct relationship between self-ideal self-correlations and defensiveness, and the prognostic value of *Q* sorts coupled with other evidence of emotional disturbance.

- 10:00 Clinical determinants of extra-hospital adjustment. JOHN B. MARKS, JAMES C. STAUFFACHER, AND CURTIS M. LYLE, *VA Hospital, American Lake, Washington.*

Measures were taken on schizophrenic patients leaving a VA hospital, and then their adjustment was measured after one year in the community. 45 patients remained continuously out of the hospital for one year. Criterion measures came from a social worker's ratings on a home visit. Predictor measures included test, interview, and behavior ratings taken at departure. 49 of the 135 predictors correlated significantly with the criteria. Psychopathology was more predictive than social behavior, tests more predictive than interview or behavior ratings, and empirical criterion scales more predictive than "pure factor" ones.

- 10:10. An outcome index for mental hospital patients. ANNE S. HARDESTY AND E. I. BURDOCK, *Biometrics Research, New York State Department of Mental Hygiene, and Columbia University.*

At any particular point in time the population of patients in a mental hospital shows variability with respect to length of stay, proportion of time spent in the community, number of admissions and releases, and span of time under observation. If these factors could be combined into an index number, patients might be compared with one another for severity of illness, homogeneous subgroups might be distinguished, and correlations between treatment and outcome might be revealed. An Outcome Index ranging from 0 to 1 has been devised for the mental patient's experience of hospitalization.

## Division 12. Symposium: Research in Juvenile Delinquency: Description, Prediction, and Treatment

9:00-10:50. Louis XVI Room, Sherman

HERBERT C. QUAY, *Vanderbilt University*, Chairman

### Participants:

DONALD R. PETERSON, *University of Illinois*. Personality factors related to juvenile delinquency.



PETER F. BRIGGS, *University of Minnesota*. Achievement among delinquency-prone adolescents.

ROBERT D. WIRT, *University of Minnesota*. Personality and environmental factors in the development of delinquency.

PAUL H. BOWMAN, *University of Chicago*. Delinquency and school experience.

**Division 12 and Society for Projective Techniques. Symposium: The Use of Projective Techniques for Predicting the Outcome of Psychotherapy**

9:00-10:50. Grand Ballroom, Sherman

WALTER G. KLOPFER, *University of Portland*,  
Chairman

**Participants:**

TIMOTHY F. LEARY, *Harvard University*. The role of Level III (projective) data in prediction.

ALAN F. GREENWALD, *Corrections Division, United States Navy*. The measure of affective complexity as a predictor in psychotherapy.

RICHARD S. SIEGAL, *Menninger Foundation*. The prediction of psychotherapeutic success from the individual case approach.

THEODORA M. ABEL, *Postgraduate Center for Psychotherapy*. The use of projective techniques in the training of psychotherapists.

**Division 16. Symposium: Problems in Evaluating the Effectiveness of Instruction of Mentally Handicapped Children**

9:00-10:50. Venetian Room, Morrison

HAROLD A. DELP, *Little City, Palatine, Illinois*,  
Chairman

**Participants:**

WILLIE H. SCARBOROUGH, *Chicago Board of Education*. Evaluating the academic achievement and the practical reading skills of mentally retarded children.

WILLIAM ITKIN, *Chicago Board of Education*. Personality evaluation of mentally handicapped children through behavioral data.

ADELE M. MOREL, *Chicago Board of Education*. Evaluating personality changes of mentally handicapped children through a verbal projective test.

FRANCES A. MULLEN, *Chicago Board of Education*. Problems in interpretation of findings.

Discussant: HAROLD R. PHELPS, *Illinois State Normal University*.

**Division 22. Veterans Administration Workshop on the Rehabilitation of the Severely Disabled**

9:00-4:50. Ruby Room, Sherman

LESLIE D. KNUDSEN, *VA Regional Office, Chicago, Illinois*, Chairman

**Participants:**

WILLIAM M. USDANE, *San Francisco State College*. Trends in the rehabilitation of the severely disabled.

C. H. PATTERSON, *University of Illinois*. Factors in motivating the severely disabled to participate in rehabilitation.

LESLIE D. KNUDSEN, MARGARET FRANK, AND TERENCE W. O'ROURKE, *VA Regional Office, Chicago, Illinois*. A severely disabled rehabilitation case.

Discussants: WILLIAM M. USDANE, *San Francisco State College*; AND C. H. PATTERSON, *University of Illinois*.

**Division 7. Developmental Studies**

10:00-10:50. Cotillion Room, Morrison

VAUGHN J. CRANDALL, *Fels Research Institute*,  
Chairman

10:00. Human cardiac acceleration to sound during initial 96 postnatal hours. ALEXANDER K. BARTOSHUK, *Brown University*.

An 80 db. sound was presented to 120 human neonates. Mean cardiac acceleration on Trial 1 was 11 beats/min. ( $p < .0001$ ). Pre- and poststimulation heart rates correlated positively (.80); prelevel and absolute change correlated negatively (-.54). Post-levels were converted into *T* scores which partialled out prelevel (Lacey). Analysis of variance for Trial 1 revealed only a significant ( $p < .001$ ) age effect (greater cardiac acceleration in older subjects). This age effect for responsiveness to sound resembles findings for vision (Zetterstrom) and touch (Lipsitt & Levy). A reliable response decrement across trials (central habituation?) was greater ( $p < .01$ ) in older subjects.

10:10. The relationship of age and intelligence to autonomic response patterns evoked by psychophysiological stressors. WILLIAM VOGEL, *Walter Reed General Hospital*.

An attempt was made to relate autonomic functioning under psychophysiological stressor conditions to individual development, as measured by age and in-

telligence of subjects. It was found that stressor conditions evoked more perfectly integrated sympathetic response patterns from the older than from the younger subjects. Second, autonomic specificity, a measure of response stereotypy, tended to decrease as an inverse function of age. Both obtained findings are in the direction predicted from Werner's theory of development. However, no significant relationships were found between autonomic specificity or sympathetic response patterns and intelligence.

10:20. Stability of achievement behavior from childhood through adulthood. HOWARD A. MOSS AND JEROME KAGAN, *Fels Research Institute*.

Thirty-six males and 35 females were reliably rated for achievement behavior during four childhood periods (birth to age 14) and in early adulthood. The childhood ratings were made by one psychologist and were based on longitudinal observations of the child in different situations. The adult ratings, made by a second psychologist, were based on interviews with each subject. Correlations between the child and adult ratings revealed that achievement behavior during ages 6 to 14 was a reliable predictor of adult achievement behavior. Achievement striving for ages 3 to 6 was a less consistent predictor of adult behavior.

10:30. Concept difficulty as a function of exemplar attributes. SONIA F. OSLER AND GRACE E. TRAUTMAN, *Goucher College and Johns Hopkins University*.

Children at three age levels were studied in a problem solving situation in which success could be achieved only by learning the concept "two." Three sets of stimuli, 150 in a set varying in concreteness, were used as instances of the concept. The results reveal that difficulty of concept achievement is a function of stimuli used.

10:40. Developmental levels in the content of children's drawings. JUSTIN PIKUNAS AND HUGH CARBERRY, *University of Detroit*.

A total of 3,200 drawings were obtained from a sample of 350 children, ranging from 5 to 15 years, in order to determine the developmental variation existing in the content of the normal child's drawings. The instrument used in collecting these data was the Pikunas Graphoscopic Scale, a semistructured projective technique. The major trends revealed an increasing variety of content, completeness, and depiction of detail as age increased. Differing in terms of age, the most frequently drawn objects were the human person, factory made objects, and animals. Individual cues also revealed significant changes in content from one age group to another.

#### Division 7 and International Council of Psychologists. Symposium: Childhood and Mental Health: The Influence of the Father in the Family Setting

10:00-11:50. Grand Ballroom, Morrison

DEE G. APPLEZWEIG, *Connecticut College*, Chairman

##### Participants:

URIE BRONFENBRENNER, *Cornell University*. The family structure: The relative roles of fathers and mothers and the importance of each to personality development.

LOIS HOFFMAN, *University of Michigan*. Some effects of the extent of the father's participation in child care as it affects peer group adjustment.

ROGER BURTON, *National Institute of Mental Health*. The absent father: Effects on the developing child.

Discussant: EMMA LAYMAN, *International Council of Psychologists*.

#### Division 8. Contributed Papers I

10:00-10:50. Jade Room, Sherman

SARNOFF MEDNICK, *University of Michigan*,  
Chairman

10:00. Self-rankings of leader behaviors by peer elected adolescent leaders. ROGER E. WILK, *University of Minnesota*.

Perceptions of self in relation to others have been postulated as important determiners of interpersonal behavior. This study investigated the relationship between (a) the self-rankings of leader behaviors, based on intragroup comparisons made at two intervals in newly formed groups, and (b) leader effectiveness as determined by peer election. Results from five troops of adolescent Boy Scouts ( $N = 168$ ) showed that the most effective leaders rated themselves significantly higher on three leader behaviors than did the less effective with little change over time. It was concluded that self-estimates based on social comparisons are formed early in newly organized groups and are related to effective performance in the group.

10:10. Reaction to failure-frustration as a function of expectancy for success. LEROY H. FORD, JR., *University of Buffalo*. (Sponsor, Ira S. Cohen)

Several theorists have suggested the likelihood of a relationship between expectancy and frustration-reaction. Rotter's social learning theory suggests the general hypothesis that reaction to goal-response blocking is an increasing function of expectancy for goal attainment. This hypothesis was tested in several

ways and was, for the most part, supported. A significant decrease in forcefulness of response under the failure-frustration conditions of this experiment was also found. This was interpreted as a function of social learning and as inconsistent with the frustration-aggression and increased vigor hypotheses of reaction to frustration.

10:20. Effects of verbal reinforcement on response changes in a nonreinforced situation. SIGMUND TOBIAS, *Brooklyn College*.

This study examined whether the effects of verbal reinforcement generalize. References to dogs were reinforced in a story telling situation, and response changes in a nonreinforced perceptual task were predicted. The effect of changing examiners, in addition to varying tasks, was also studied, as was the relationship between the amount of generalization and the number of reinforcements. The data offered tentative evidence for the existence of generalization from one task to another, and varying examiners was found to be unrelated to the amount of generalization. The relationship between reinforcement and generalization varied in different groups.

10:30. The effect of partial reinforcement on task completion in the absence of supervision. ROLAND L. FRYE, THOMAS M. STRITCH, AND BERNARD M. BASS, *Mississippi Southern College and Louisiana State University*

This study was designed to test the effect of different schedules of reinforcement on performance in the absence of supervision. It is an attempt to interrelate the interaction theory stated by Bass in his book *Leadership, Psychology and Organizational Behavior* to reinforcement theory. The results of an analysis of covariance indicated that the partially reinforced groups continued to work significantly longer in the absence of supervision than did nonreinforced groups or 100% reinforced groups of grade school children. The data for college groups have not been completely analyzed, and conclusions are deferred until the completion of the second analysis.

#### Divisions 8 and 9. Symposium: The Utilization of Creative Potential in Our Society

10:00-11:50. Bernard Shaw Room, Sherman

WALTER GRUEN, *Harvard University*, Chairman

##### Participants:

ELIZABETH DREWS, *Michigan State University*. Aspirations and achievement motives in gifted adolescents.

FRED E. FIEDLER, *University of Illinois*. Leadership, group composition, and group creativity.

PAULINE N. PEPINSKY, *Ohio State University*. The social dialectic of productive nonconformity.

#### Division 13. Symposium: Consulting Psychology and the Public Schools

10:00-11:50. Bal Tabarin, Sherman

CHARLES R. STROTHER, *University of Washington*, Chairman

##### Participants:

VIRGINIA R. HATHAWAY, *Minneapolis Public Schools*. Psychological consultation within the schools: Cooperative service from staff and community agencies.

EDGAR A. DOLL, *Bellingham, Washington*. How the independent consultant can serve schools and community educational agencies.

HELEN I. DRIVER, *Dane County Guidance Center, Madison, Wisconsin*. Consulting relationships between agencies and schools: Some problems and obstacles.

H. MAX HOUTCHENS, *VA Central Office*. Responsibilities of psychologists as consultants at various educational levels.

#### Division 16. Symposium: Training, Supervision, and Employment of School Psychologists

10:00-11:50. Constitution Room, Morrison

WILLIAM M. CANNING, *Chicago Board of Education*, Chairman

Participants: DONALD G. FERGUSON, *Kent State University*; SUSAN W. GRAY, *George Peabody College for Teachers*; BERTHA LUCKEY, *Cleveland Public Schools*; AND VIRGIL WARD, *University of Virginia*.

#### Division 7. Intelligence and Personality Tests

11:00-11:50. Cotillion Room, Morrison

J. WERBOFF, *Lafayette Clinic*, Chairman

11:00. Factors in preschool intelligence tests and the prediction of distal criteria. JOHN G. HURST, *Institute of Child Development and Welfare, University of Minnesota*.

The general hypotheses under consideration were: the Merrill-Palmer Scale is multidimensional; the factors assessed by the scale are differentially related to distal criteria. The orthogonal factor structure of

the scale was determined for two samples: three-year-olds, four-year-olds. Through the use of "transformation analysis" the results from the two studies were quantitatively compared. Several factors were found at each age level, and marked factor fission and fusion was evidenced. Sizeable portions of the average item variances bore little resemblance to distal criteria (e.g., ability measures at later ages).

- 11:10. The patterning of mental test performance of infants suspected of suffering brain injury. MARJORIE P. HONZIK, *Institute of Human Development, University of California.*

The value of the California Infant Mental and Motor Scales (developed by Nancy Bayley) in differentiating infants suffering brain injury from a group of matched controls has been studied in three groups of 8-10-month infants as follows: infants diagnosed as brain injured, infants suspected neonatally as suffering brain injury, and normal controls. Analysis within the "diagnosed" group indicates that the mental and motor scores are highly correlated with physicians' evaluations of neurological involvement. In addition, certain test items differentiate the "suspects" from the controls at a significant level.

- 11:20. Primary ability factors at MA 6: Hypotheses and results on normals and mentally retarded. C. E. MEYERS AND H. F. DINGMAN, *University of Southern California and Pacific State Hospital.*

Factors of thinking, perceptual speed, linguistic skill, and psychomotor skill were selected as representative of well-established factors in adults, and hypothesized for young children. Thirteen tests for these hypotheses were individually administered to 100 normal children of CA 6 years and 100 mental retardates of a mean MA of 6 years. Separate analyses were made for the two groups. For both groups oblique rotations yielded each factor as hypothesized. Patterns of intercorrelations of factors were somewhat different for the two groups.

- 11:30. A pictorial investigation of self-concept in younger school age children. NATHANIEL J. RASKIN, NINA PASHKOW LIPKIN, AND JEROME L. SCHULMAN, *Children's Memorial Hospital, Chicago, Illinois.*

Forty children, of both sexes, seven and nine years old, were asked to describe themselves in relation to photographs and manikins representing children of different personality and physical types, in addition to being asked directly: "What kind of a boy [girl] are you?" While the interview question yielded the highest proportion of significant self-concept re-

sponses, and the pictorial stimuli encouraged the production of a high percentage of specific, concrete, stimulus-oriented responses, the latter technique proved to have value in eliciting self-concepts which included more negative aspects and significant dimensions than self-percepts obtained through the interview question alone.

## Division 8. The Self

11:00-11:50. Jade Room, Sherman

JULIAN B. ROTTER, *Ohio State University*, Chairman

- 11:00. Relationships among the need for positive regard, the need for self-regard, and positive regard for others. RUDOLPH WALDSCHMIDT, *Valparaiso University.*

The following hypotheses were deduced from positive regard theory: (a) the need for positive regard (deficit in the experience of positive regard from significant others) is correlated negatively with positive regard for others, (b) the need for self-regard is correlated negatively with positive regard for others, (c) these needs for regard have a higher correlation with each other than with positive regard for others. Results confirmed all of the hypotheses. Analysis showed that individuals with low needs for regard have high regard for others. But if at least one of these deficits in regard is large, then positive regard for others varies considerably.

- 11:10. Self-perceptions under different educational systems. WALTER R. BORG, *Utah State University.*

This study compares self-perception scores of ninth grade pupils in ability grouped and random grouped school systems. The Bills Index of Adjustment and Values, yielding four self-perception scores, was administered. Consistent sex differences favoring girls were found in both systems. Eight of 24 differences between comparable subgroups in the two systems were significant. Significantly lower scores of low ability children in the ability grouped system as compared with the random grouped system suggest that ability grouping increases awareness of ability and in turn leads to self-perception differences. Ability grouping may lead to personality problems of low ability pupils that did not emerge in a random grouped situation.

- 11:20. An experimental investigation of self-cognition. DAVID FREEMAN, *San Francisco State College.*

Is it possible to predict perceptual outcomes elsewhere from a prior measurement of differential per-



ceptual modes discernible in self-perception. 1,487 subjects completed a Cognition Inventory consisting of 60 items judged to be self-descriptive of all persons. Three groups of 30 subjects were selected who perceived items mostly self-descriptive or self-alien. An original perceptual apparatus called a Cognition Chamber presented stimulus materials under controlled lighting conditions. Obtained group recognition thresholds were as predicted, exceeding the .001 level. Measurement and description of perceptual variables influencing self-description outcomes provide clues to a possible perceptual orientation to experience.

- 11:30. Self concept, mother concept, and food aversions in normal and institutionalized children. ANTHONY DAVIDS AND MARCIA J. LAWTON, *Brown University and Bradley Hospital*.

In groups of normal and emotionally disturbed 11-year-old boys, indices of self and mother concepts were derived from direct methods and projective methods, and food aversions were assessed by an objective inventory. Positive correlations were found between self and mother concepts, and there were negative correlations between these measures and number of food aversions. There were more inconsistencies in findings from the disturbed children. Compared with them, the normal boys evidenced a significantly higher self concept, higher mother concept, and fewer food aversions. Pathological early mother-child relations were considered in accounting for findings from the institutionalized children.

## Division 12. Psychopharmacology

11:00-12:50. Crystal Room, Sherman

MARSHALL R. JONES, *University of Nebraska*,  
Chairman

- 11:00. The effects of thiorazine on association learning in schizophrenic patients. NORRIS D. VESTRE, *VA Hospital, St. Cloud, Minnesota*.

Little is known regarding the effects of the tranquilizing drugs on basic psychological processes, e.g., learning, retention, reasoning, judgment. A learning task was devised which required that the subject reject (or unlearn) a strong response (his preferred response to a stimulus word) and learn a new response in its place. This study investigated the effects of thiorazine on attempts to alter, by selective reinforcement, these preferred responses to stimulus words of schizophrenic patients. Also, by subdividing each learning group (drug and placebo) into two retention groups each, the effects of thiorazine on retention was assessed.

- 11:10. Some effects of two tranquilizing drugs and a placebo on self-perception. JOHN MEANY, *System Development Corporation, Santa Monica, California*.

This is an experimentally controlled study of the effects of two tranquilizing drugs, meprobamate (400 mg.) and perphenazine (4 mg.), as well as a placebo on changes in self-perception as measured by *Q* sorts. The differences between the subject's perception of his real and his ideal self before and during sedation were studied. Eighteen normal male subjects were divided into three experimental groups and were administered drugs and placebos which had the same appearance, using a double blind technique. Commonly prescribed dosages were used. The effects of a placebo and the drugs on the changes in the self-perceptions of the subjects were not significantly different statistically.

- 11:20. The effects of meprobamate and placebo on four tests of visual perception. KATHERINE F. RUTTIGER AND MORGAN UPTON, *Rutgers University*.

The tests were the Necker Cube (reversible figure), Retinal Rivalry (red-green oscillation), Archimedes Spiral (aftereffect), Peripheral Span (speed of perception). Demonstrable effects appeared with Retinal Rivalry where the reversal rate for red-green became slower in the drug subjects. The decrease in spiral aftereffect appeared to be identical in both drug and placebo subjects whose reaction times were long. Short time reactors displayed no changes. Inter-individual ranges of scores on all tests were great, but the intraindividual performances were highly consistent. Scores on the Maudsley Personality Inventory (Eysenck) provided little clue to consistent individual differences.

- 11:30. Factor space  $D^2$  analysis of change in schizophrenic patients during chemotherapy. JOHN E. OVERALL AND DONALD R. GORHAM, *VA Central Neuropsychiatric Research Laboratory, Perry Point, Maryland*.

The investigation is designed to study the nature of change in schizophrenic patients during chemotherapy and to evaluate the relative effectiveness of six different tranquilizing agents in producing desirable change. Standardized psychiatric interview and ward behavior ratings (Lorr) are available for each of 500 patients. The "within groups" correlation matrix is factor analyzed to yield two uncorrelated dimensions of change. Uncorrelated factor scores are computed to represent each dimension, and Mahalanobis'  $D^2$  is employed to identify significant differ-



ences between drug effects which were not previously discovered using precise univariate methods.

- 11:40. A neuropsychological study of chlorpromazine, a cyclopregnan steroid, deanol, and meprobamate-benactyzine. ARMAND W. LORANGER, *New York Hospital-Westchester Division*.

There is need for detailed, sensitive, and objective instruments to gauge the behavioral and neuropharmacological effects of the new psychopharmacological agents which are being introduced in increasing numbers in the treatment of psychiatric illnesses. Of particular value are measures which are sensitive to changes in both the nervous system and behavior. The present investigation concerns the use of three such neuropsychological techniques in the assessment of four new psychopharmacologic agents: the critical flicker fusion threshold for intermittent light (CFF), the fingerprint-densitometric determination of palmar perspiration, and the Digit Symbol subtest of the Wechsler Adult Intelligence Scale.

- 11:50. The effect of lysergic acid diethylamide (LSD-25) on maintenance of set in normal and schizophrenic adults. DONALD M. KRUS AND SEYMOUR WAPNER, *Clark University*.

Two main findings—impairment of performance of both normals and schizophrenics on the Stoop Word-Color Test under conditions of LSD-25 as compared to placebo, and the impaired performance of schizophrenics as compared to normals under no-drug (placebo) conditions—are discussed in terms of comparative-developmental theory and are related to parallel changes found in the course of ontogenesis.

- 12:00. The effect of methylphenidate on intellectually handicapped children. ARTHUR W. BLUE, GEORGE J. LYTTON, AND OREN W. MILLER, *Child Guidance Clinic, St. Joseph, Missouri*.

In an effort to evaluate the effect of methylphenidate (Ritalin) on intellectually handicapped children, the drug was administered to 30 handicapped children, while a similar group received a placebo. These children were selected at random from a public school limited to children whose intellectual capacity as measured by school tests falls between 48 and 78. Performance was measured before and after drug and placebo administration by the California Test of Mental Maturity, the Metropolitan Achievement Test, and a teachers' rating scale especially devised for this project. Results suggest that methylphenidate improves performance in some areas by increasing persistence of effort and an elevation of mood.

- 12:10. The recall of reaction of LSD-25. HARRIET LINTON AND ROBERT J. LANGS, *Research Center for Mental Health, New York University*.

When questioned on the day following the administration of LSD-25, certain subjects failed to report reactions that they had reported while under the effect of the drug. These subjects tended to be those who, during the drug day, reported fewer drug effects; in particular, they reported fewer body image changes, less loss of environmental contact, and fewer childlike feelings. Other evidence indicates that, normally, they are people who maintain a good social facade, show little manifest anxiety, and avoid intellectualization and sensuous experience. For the entire sample, the drug effects most likely to be forgotten are body image changes.

#### Division 12 and Society for Projective Techniques. Symposium: Custom-made Projective Techniques

11:00-12:50. Louis XVI Room, Sherman

BERTRAM R. FORER, *Journal of Projective Techniques*, Chairman

Participants: FRED J. GOLDSTEIN, *Los Angeles Psychiatric Service*; GERALD S. LESSER, *Hunter College*; AND ALBERT I. RABIN, *Michigan State University*.

#### Division 16. Contributed Papers I

11:00-11:50. Embassy Room, Morrison

SAMUEL STALNICK, *Chicago Board of Education*, Chairman

- 11:00. Diagnostic comparisons of achieving and nonachieving mental retardates. R. J. CAPOBIANCO AND RUTH A. FUNK, *University of Minnesota and Oneida County Mental Health Clinic*.

A series of psychological, educational, and neurological diagnostic tests were administered to 20 achieving and 20 nonachieving mental retardates, representing both sexes. Results tended to support the findings of other investigators who investigated certain phases of these diagnostic differences among normal children. Of particular importance are the differences discovered in constitutional factors—left-handedness was more prevalent among nonachievers—and the tendency for the nonachiever to be more representative of left hemisphere foci. In personality, the nonachiever gave a greater impression of disinhibition, impulsivity, acting-out, and schizoid trends.

- 11:10. Table to assess the reliability of differences between subtest scores on the Wechsler Intelligence Scale for Children. W. B. DOCKRELL AND H. D. PETERS, *University of Alberta*. (Sponsor, C. M. Christensen)

Profile interpretation assumes that obtained differences between tests are reliable. This paper presents a table that allows an examiner to estimate the probable reliability of differences on any WISC profile as a preliminary to interpretation. Using Wechsler's standardization data, a table has been constructed showing differences in scaled score units between pairs of subtests significant at the .15 level. One can estimate the probable reliability of obtained differences by comparing them with this table. The statistical basis of the table is explained and a technique described that permits the ready construction of similar tables significant at any chosen level.

- 11:20. The early identification of deviations in perceptual development. MARIANNE FROSTIG AND WELTY LEFEVER, *Marianne Frostig Clinical School and University of Southern California*.

Clinical experience with neurologically handicapped children suggested that several distinct areas of perceptual development exist, developing most strikingly between the ages of 3 and 7. A pencil-and-paper test in five perceptual areas (eye-motor coordination, constancy of shape, figure-ground relationships, position in space—reversals and rotations, spatial relationships) was administered to nursery and grade school children and to a control group of neurologically handicapped children. The results substantiated the hypotheses and indicated that the test can be used in schools as a screening device to detect deviations and so permit the institution of specialized remedial programs.

- 11:30. The use of the Iowa Basic Skills Tests in longitudinal study of academically talented children in grades 3-6. CONWELL HIGGINS, *Board of Education, Albany, New York*.

Ceiling effects seriously limit the use of group measures of reading and arithmetic with academically talented children, particularly in longitudinal studies. The hypothesis is made that the test items of the Iowa Basic Skills Tests are distributed through each test range in an acceptable gradient of difficulty. By means of a technique for testing floors and ceiling for each pupil, it is possible to have the pupil respond on the appropriate band of items. Thus a corrected raw score removes the dampening effect of the test ceiling. Conversion tables provide corrected grade-placements (no extrapolation) for use in allometric charting.

## THURSDAY AFTERNOON, SEPTEMBER 1

### Division 7. Behavior of Parents and Children

12:00-1:50. Venetian Room, Morrison

RICHARD L. CUTLER, *University of Michigan*,  
Chairman

- 12:00. Some relationships between the frequency of infants' vocalizations and mothers' behaviors. LEILA BISHOP, *San Mateo County Child Guidance Clinic*.

Twenty-four mother-infant pairs were observed in two sessions of spontaneous interaction in their homes, and the frequency of various behaviors was noted. The mean of the infants' age was 8.7 months at the first session, and 10.0 months at the second session. Although the frequency of infant babbling showed low reliability from the first to the second session, at each session the amount of infant babbling correlated with the frequency of various of the mother's behaviors, particularly her verbalizations and physical contacts with the infant, and the opportunities she gave him to explore. Also, the more suppressive the mother's attitudes as revealed by PARI, the less the infant babbled.

- 12:10. Noncontinuous mothering in infancy and development in later childhood. D. BRUCE GARDNER AND GLENN R. HAWKES, *Iowa State University*.

Central problems in personality development involve the role of infantile experiences, particularly with the mother. The long-range effects of marked discontinuities in the mother-infant relationship are explored in this study. Older children, aged 8 to 17, who lived as infants in a college home management house, were matched with control subjects for sex, age, intelligence, and a variety of family and community variables. Tests of school achievement and of personality revealed that the pairs were essentially comparable in the dependent variables. Implications for personality development, and for the design of further research, are discussed.

- 12:20. Synergistic parental role components: Application to expectancies and behavior—Consequences for child's curiosity. IRVING TORGOFF, *Merrill-Palmer School*.

A theoretical and methodological approach to the study of parental role involving simultaneous utilization of two independent but synergistically operative components is presented with empirical confirmation. Parental role conceptualized as intrinsically involving

expectancies and behavior concerning: (a) pressuring child to conform to demands originating externally to child, e.g., achievement-inducing socialization pressures—exogenous component; (b) granting child independence to manifest internally determined behavior—endogenous component. Parents vary quantitatively in emphasis they place on exogenous relative to endogenous component (Ex/En ratio). Parental role expectancies measured with newly devised objectively scored projective questionnaire. Curvilinear relationship between developmental expectancy Ex/En ratio and manifested influence behavior Ex/En ratio found. Hypothesized negative relationship found between parents' emphasis on exogenous relative to endogenous expectancies and child's curiosity. Significance of synergistic components concept for child development discussed.

12:30. A natural experiment in visual deprivation. JEROME COHEN, *Northwestern University*.

This is a report of interdisciplinary research in progress of a ten-year study on the development of blind children. Approximately 50 subjects followed from infancy are available for the study. The average age is 10 years, and 85% are blind due to retrolental fibroplasia. Tests of intellectual ability and scales of personality and social development are related to case history material and thorough medical studies. Perceptual and cognitive abilities are studied by experimental methods. The findings indicate the necessity for an interdisciplinary approach to child development before drawing conclusions from any one discipline.

12:40. A longitudinal approach to exploratory studies. WILLIAM A. KOPPE, *Union College*.

In order to gather comparable longitudinal evidence for an exploratory study of character development, a feedback mechanism was developed in conjunction with a character education research curriculum. Parents, teachers, and sometimes the children being studied reported their experiences in response to open-end questions. Records have been gathered on 134 families in which parents have reported on at least one child for eight years or more. Records are also on file for the 234 siblings of these children. Initial studies indicate that certain learnable characteristics of children at one age level predict moral and social adjustment four years hence.

12:50. A study of parent roles using the method of characteristic differences. ERNEST M. LIGON, *Union College*.

A study of parent roles conducted in the Character Research Project and using primarily the method of

characteristic differences yielded important results. The classical approach of setting hypotheses, constructing appropriate experimental designs, performing an appropriate experiment or research investigation, and finally testing the null hypothesis is a very costly and unproductive approach to many problems in social psychology. When a body of data can be divided into two contrasting groups by one or more criteria or ranked in terms of some dimension, a search for characteristic differences regularly reveals promising hypotheses to explore. Action studies and resorting techniques can be used to test hypotheses obtained in this manner with more classical designs being set up for further refinements. In the case of the parent role study, a large number of fathers and mothers were asked each to describe successful and unsuccessful experiences with one of his or her children. Characteristic differences were sought by several independent judges. Fathers were found to be bad disciplinarians, good teachers of ideals, and less aware of age level characteristics. Mothers were better disciplinarians, better at teaching practical skills, and much more aware of age level differences.

1:00. Home dynamics study: A search for dimensions of the family climate based on dynamic interrelationships among factors influencing parental attitudes. LEONA J. SMITH AND ERNEST M. LIGON, *Union College*.

The purpose was to discover dynamic traits believed to be operating in favorable and unfavorable family climates. Over 400 parents rated themselves on 63 personality factors. A cluster analysis disclosed 300 dynamics in home climates. Eight follow-up action studies revealed that parents could reliably recognize these dynamics in themselves and their spouses. Also, they could successfully change the family climate by using them. A significant finding, perhaps indicative of a new approach to improvement of family climates, was that parents who worked on just one factor of a dynamic were more effective in changing family climate than those working on dynamic traits as such.

#### Division 7. Symposium: Prenatal Factors Determining Later Behavior

12:00–12:50. Cotillion Room, Morrison

LEONARD CARMICHAEL, *Smithsonian Institution*,  
Chairman

#### Participants:

GILBERT W. MEIER, *Vanderbilt University*. Prenatal anoxia and irradiation: Maternal-fetal relations.

CHARLES H. PHOENIX, *University of Kansas*. Modification of sexual behavior in female guinea pigs treated prenatally with an androgen.

JACK WERBOFF, *Lafayette Clinic*. Behavioral effects of prenatal drug administration.

Discussant: LESTER W. SONTAG, *Fels Research Institute*.

#### Division 8. Group Processes I

12:00-12:50. Jade Room, Sherman

ROBERT B. ZAJONC, *University of Michigan*,  
Chairman

12:00. An experiment on active and passive resistance to social power. EDWARD E. SAMPSON AND JOHN R. P. FRENCH, JR., *University of Michigan*.

Conceptualizing an individual's conformity as a positive function of two forces—a force towards conforming (induction force) and a force directly opposite to conforming (resistance force)—we varied the attractiveness of the influencer (*O*), his expertness, and the nature of his influence attempt, in order to create a resistance force which would result in negative conformity. Our results suggest that the influence attempts from a disliked *O*, a false-expert *O*, and an *O* who seeks to control one's behavior lead to less positive and more negative conformity than a control condition.

12:10. Support of judgmental independence or conformity in situations of exposure to strong group pressure. JOSEF E. GARAI, *Staten Island Community College*. (Sponsor, Harriet B. Linton)

The relative effectiveness of a direct verbal appeal and a disguised essay appeal in strengthening judgmental independence or conformity in an Asch-type crime-judging situation was investigated. Four experimental groups and one control group of 12 students each were used. Mann-Whitney test change scores revealed significant intergroup differences only in judgments on light offenses. The results showed that the conformity appeals were generally more effective than the independence appeals, the disguised essay appeal was more effective than the direct verbal appeal, and the conformity essay was the most effective appeal of all.

12:20. Group cohesiveness, communication level, and conformity. ALBERT J. LOTT AND BERNICE EISMAN LOTT, *University of Kentucky and Kentucky State College*.

This investigation tests the predictions that both communication level and conformity will vary positively with group cohesiveness. These predictions are derived from a learning theory formulation of co-

hesiveness, defined in terms of mutual positive attitudes among group members. It is expected that in cohesive groups members will be characterized by a high drive level reflected in communication behavior and, also, that members will tend to conform to dominant opinions because they can serve as secondary reinforcers for one another's behavior. Natural groups of friends were put into a laboratory situation in which measures of cohesiveness, communication, and conformity were obtained. The relationships between cohesiveness and the other two variables were found to be significant, in the predicted direction.

12:30. Some effects of rejection upon attraction to a group. J. DIEDRICK SNOEK, *Survey Research Center, University of Michigan*.

This experiment was designed to study changes in attraction to a group after subjects had been rejected from it. Strength of rejection and reason for rejection were simultaneously manipulated in a  $2 \times 2$  factorial design. It was predicted that, when the reason for rejection referred to personal attributes (invidious rejection), the subjects would maintain their attraction to the group to a much greater extent than when the reason for rejection contained no self-reference (noninvidious rejection). The data show attraction decreased proportionally to strength of rejection in the noninvidious conditions, but remained stable in the invidious conditions.

#### Division 16. Symposium: Relationships between School Social Workers and School Psychologists

12:00-1:50. Grand Ballroom, Morrison

ROBERT O. STRIPLING, *University of Florida*,  
Chairman

##### Participants:

ROSA A. HAGIN, *Irvington Public Schools, New Jersey*. The school psychologist looks at the school social worker: A report of a survey.

JOHN C. NEBO, *National Association of Social Workers, Inc.* The school social worker looks at the school psychologist: A report of a survey.

Discussant: WARREN G. FINDLEY, *Atlanta Board of Education*.

#### APA Committee on Public Information. The Public and Professional Psychology

1:00-2:50. Bal Parlors, Sherman

IRWIN A. BERG, *Louisiana State University*,  
Chairman



**Division 7. Symposium: The Experimental Study of Infant Behavior**

1:00-2:50. Constitution Room, Morrison

HARRIET L. RHEINGOLD, *National Institute of Mental Health*, Chairman

## Participants:

WALTER C. STANLEY, *Roscoe B. Jackson Memorial Laboratory*. Learning in the infant animal.LESTER P. LIPSETT, *Brown University*. Conditioning in the human infant.Discussants: WILLIAM S. VERPLANCK, *University of Maryland*; AND WILLIAM A. MASON, *Yerkes Laboratory of Primate Biology*.**Division 8. Personality Differences I**

1:00-1:50. Jade Room, Sherman

WESLEY ALLINSMITH, *Harvard University*, Chairman1:00. Personality factors associated with the professions of nurse and dietician. SIDNEY E. CLEVELAND, *VA Hospital, Houston, Texas*.

The notion that individuals in contrasting occupations may be characterized by unique and differing personality patterns is an intriguing one. The corollary idea that personality needs and occupational roles may interact in complementary ways has received only scattered attention in the literature. The present study approaches these problems by comparing the differing personality patterns, as revealed by the Thematic Apperception Test, in groups of nurses and dieticians at both the student and staff levels.

1:10. Relationship of some personality traits to success in a transactional bargaining game: A pilot study. V. B. CERVIN, R. C. JOYNER, AND A. S. BREGMAN, *Imperial Oil Limited, Toronto, and University of Toronto*.

As in verbal interaction, it was expected that some personality traits may be related to success in a non-verbal bidding game, where pairs of subjects with different (within pairs) scores on emotional responsiveness, rigidity, and intelligence bid in writing for an old car, one subject being a buyer, the other a seller. Forty-seven pairs of students served as subjects. Both buyer and seller received confidential price limits. The differences between the agreed final price and the limits represented the respective profits. Differences in intelligence (positively) and rigidity (negatively) were significantly related to differences between the subjects' profits in this bargaining situation.

1:20. Individual differences in the interpersonal expression of hostility. HILDA DICKOFF AND JOHN ALTROCCHI, *Duke University*.

To clarify the role of individual differences in the expression of hostility, three groups, selected from senior nursing students using MMPI pattern indices, were compared on the Interpersonal Check List and in their responses to a frustrating situation. Consistent differences were observed in these groups in their perception of hostility in self, in others, and by others and in their overt behavior. The studies suggest that Expressors externalize hostile feelings and express them directly, Expressor-Sensitizers internalize hostile feelings and express them indirectly, while Repressors are less sensitive to hostility in themselves or others but tend to express hostility indirectly.

1:30. Extroversion-introversion and the time course of performance in an auditory vigilance task. PAUL BAKAN, JOHN C. TOTH, AND JOHN A. BELTON, *Michigan State University and Perkins School for the Blind*.

To study the time course of performance in an auditory vigilance task as a function of extroversion-introversion. On the basis of extreme scores on the extroversion scale of the Maudsley Personality Inventory a group of extroverts and introverts was selected and tested on an auditory vigilance task for 48 minutes. The task required detection of digit sequences in the order odd-even-odd occurring within a continuous series of digits. Extroverts showed a decrement in performance over time, whereas the introverts did not show a decrement. The data support Eysenck's hypothesis of faster development of inhibition for extroverts than for introverts.

**Division 8. Symposium: Studies of Game Behavior**

1:00-2:50. Bal Tabarin, Sherman

ANATOL RAPOPORT, *University of Michigan*, Chairman

## Participants:

KELLOGG V. WILSON, *Kent State University*. Forms of social control in two-person games.ANATOL RAPOPORT, *University of Michigan*. Experiments on certain non-zero-sum three-person games with communication disallowed.ALVIN SCODEL, *Ohio State University*. Some empirical studies in the theory of games.Discussant: THOMAS C. SCHELLING, *Harvard University*.



**Division 12. Symposium: Clinical Psychology:  
The Second Generation's Perspective and  
Prospectus**

1:00-2:50. Grand Ballroom, Sherman

HAROLD J. FINE, *Veterans Administration,  
Bridgeport, Connecticut*, Chairman

**Participants:**

LEONARD ULLMANN, *Veterans Administration, Palo  
Alto, California*. The clinician as behavioral  
scientist.

CARL N. ZIMET, *Yale University*. Psychologist  
first, clinician second: A slogan reconsidered.

ALLAN TOWBIN, *Veterans Administration, West  
Haven, Connecticut*. Toward professional ma-  
turity.

HAROLD J. FINE, *Veterans Administration, Bridge-  
port, Connecticut*. How smug are we.

**Division 16. Contributed Papers II**

1:00-1:50. Embassy Room, Morrison

NORMAN KERR, *Chicago Board of Education,  
Chairman*

1:00. Parent attitudes and patterns of rearing the  
mentally retarded child. NATHAN S. LEICHMAN,  
*California State Department of Education*.

Value systems of 400 mothers of educable and  
severely mentally retarded children were analyzed to  
provide data on dependency, rejection, impact of the  
retarded child on family adjustment and sibling ten-  
sion, school placement and achievement. Results indi-  
cated that these parents often developed feelings of  
inadequacy, guilt, and anxiety because they had no  
guidelines by which to rear their children, since they  
could not use their own child-rearing experience as  
patterns. The child-rearing patterns of these mothers  
are expected to provide for other parents the "experi-  
ences" which come from the rearing of a mentally  
retarded child.

1:10. Developing limits in a school for acting-out  
girls. JANET E. LIEBERMAN, *Bureau of Child  
Guidance, New York City*.

In a special school for aggressive girls, the devel-  
opment of limits on group and individual behavior  
represents the interplay of administration, clinical  
team, students, and teaching staff. Population of the  
school includes girls, aged 13 through 17, suspended  
from regular day school for aggressive behavior; the  
procedures were developed during a two-year period.

The clinical insight of the psychological and social  
work personnel helped the staff to differentiate be-  
tween punitive and positive limits. Changes in rou-  
tines grew out of appreciation of the need for con-  
trols. The same limits assume different meanings with  
the presence of a policeman in school. Special prob-  
lems resulted from the demands of the community  
environment. Limits emerge as a result of a dynamic  
equilibrium. Some of the factors in this equilibrium  
are the needs of the girls, the insight of teachers and  
administration, and the influence of the professional  
workers.

1:20. Personality characteristics and attitudes to-  
ward achievement of good and poor readers.  
IRLA LEE ZIMMERMAN AND GEORGE N. ALLE-  
BRAND, *Whittier, California, and Los Nietos  
School District, California*.

In a comparison of personality characteristics and  
attitudes toward achievement seen in children classi-  
fied on standard tests as "good" (grade level or  
better) and "poor" (at least two years retarded)  
readers, the California Test of Personality and pro-  
jective measures revealed significant differences be-  
tween the two groups. Thus, in contrast to the good  
readers, the poor readers described themselves as  
consistently below average in both personal and social  
areas. Thematically, the poor readers were more apt  
to view the learning situation as discouraging and  
even hopeless, while good readers stressed themes of  
effort and ultimate success.

1:30. An investigation of the validity of the H-T-P  
as an intelligence test for children. VYTAUTAS  
J. BIELIAUSKAS AND JOSÉE F. MOENS, *Xavier  
University and Ecole Supérieure de Psychologie  
de l'Université de Louvain*.

This preliminary study was concerned with the  
validity of the present H-T-P scoring system as  
applied to children. Sixty-three grade school children:  
23 second graders and 42 fifth graders were admin-  
istered H-T-P and Kuhlman-Anderson Intelligence  
Test. The correlation of the scores on both tests  
yielded  $r$ 's from .43 to .45 for the second grade, and  
from .44 to .59 for the fifth grade. A correlation of  
the corrected H-T-P scores obtained in using the  
Binet tables with Kuhlman-Anderson produced  $r$ 's  
= .53 to .58 for the second grade, and .63 to .71 for  
the fifth grade. Though this represented a slight im-  
provement, graphic evaluation suggested that the  
original H-T-P scores tended to be lower, and the  
corrected scores were higher, than Kuhlman-Anders-  
on. Neither of the scoring systems yielded  $r$ 's suffi-  
cient for individual prediction.

**Division 16. Symposium: National Research Programs: Their Impact upon School Psychology**

1:00-2:50. Terrace Casino, Morrison

SUSAN W. GRAY, *George Peabody College for Teachers*, Chairman**Participants:**RALPH W. TYLER, *Center for Advanced Study in the Behavioral Sciences, Palo Alto*. United States Office of Education Cooperative Research Program: Its origins and implications for the schools.JOHN M. STALNAKER, *National Merit Scholarship Corporation*. Research in the National Merit Scholarship Program.GILBERT WRENN, *American Personnel and Guidance Association*. Guidance in American Schools.JOHN C. FLANAGAN, *American Institute for Research*. Implications of Project TALENT.**Division 7. Conscience and Dependency**

2:00-2:50. Venetian Room, Morrison

I. TORGOFF, *Merrill-Palmer School*, Chairman2:00. Dependency and performance by preschool children on a socially reinforced task. RICHARD C. ENDSLEY AND WILLARD W. HARTUP. *Iowa Child Welfare Research Station*.

This investigation tests the hypothesis that dependency is one determinant of level of performance on socially reinforced tasks. Persistence and rate of response on a simple, repetitive motor task were measured for "high," "moderate," and "low" dependent children in each of two preschool classes. Performance was measured in individual sessions in which a female experimenter employed a standard schedule of verbal reinforcers. Dependency was defined as seeking praise from teachers. Results: "high" and "moderate" subjects performed significantly more persistently than "low" subjects; no difference existed between "high" and "moderate" subjects. "High" subjects also tended to respond faster than "low" subjects.

2:10. Oral dependency in anxious and defensive children. BRITTON K. RUEBUSH AND RICHARD R. WAITE, *Yale University*. (Sponsor, Seymour B. Sarason)

Two predictions about the dependency behavior of high test-anxious and low test-anxious children were made. The first was derived from the hypothesis that the behavior of high test-anxious children is charac-

terized by more indications of oral dependency than is the behavior of low test-anxious children. The second prediction dealt with the behavior of children who obtained low anxiety scores but who were defensive about the expression of negative affect. It was expected that these children would show more indications of oral-dependent behavior than low anxious, nondefensive children but that the indications would appear in a relative  $y$  disguised form. Both predictions were supported insofar as male subjects were concerned.

2:20. The development of conscience. LEONORE BOEHM, *Brooklyn College*.

In a study of the development of conscience it was found that: maturity of children's responses to questions concerning motivation and consequences vary in age according to the specific aspect involved; conscience develops according to the demands of one's culture and subgroup; upper middle class children, children of good intelligence, and Catholic parochial school children answered questions involving motivation and consequences maturely when younger than working class children, children of average intelligence, and children attending public schools or a Yeshivah; American children responded maturely earlier than Piaget's Swiss subjects; contrary to Piaget's findings mature responses were unrelated to adult independency.

2:30. Parental child-rearing practices, guilt, and resistance to temptation of sixth grade children. ROBERT E. GRINDER, *University of Hawaii*.

A child's degree of resistance to temptation is hypothesized to be a measurable consequence of his identification with parental values and positively related to his reactions of guilt. The latter measures were inferred from mother-interviews obtained when the experimental children were in kindergarten. The measure of resistance to temptation was obtained with a simulated shooting gallery where subjects, without fear of detection, individually were tempted to boost their scores. Significant relationships are reported between resistance to temptation for both sexes and (a) child-rearing practices presumed to be antecedent to the development of identification and (b) behavior presumed to be characteristic of reactions of guilt.

**Division 7. Symposium: Parent Behavior and Children's Personality Development: Current Project Research**

2:00-3:50. Cotillion Room, Morrison

WILLIAM E. MARTIN, *Purdue University*, Chairman

## Participants:

VAUGHN J. CRANDALL, WALTER KATKOVSKY, AND ANNE PRESTON, *Fels Research Institute*. Parents' attitudes and reactions and the development of children's achievement behaviors.

ROBERT R. SEARS, LUCIE RAU, AND RICHARD ALPERT, *Stanford University and Harvard University*. Identification and child training.

MARTIN L. HOFFMAN AND HERBERT SALTZSTEIN, *Merrill-Palmer School*. Parent practices and the development of children's moral orientations.

Discussants: BOYD R. McCANDLESS, *State University of Iowa*; EMANUEL K. BELLER, *Council Child Development Center, New York*; AND WESLEY ALLINSMITH, *Harvard University*.

## Division 8. Social Attitudes

2:00-2:50. Jade Room, Sherman

MORTON DEUTSCH, *Bell Telephone Laboratories*,  
Chairman

2:00. A re-examination and reinterpretation of the effect of "own attitude" as an anchor on the judgment of neutral items in equal-appearing intervals scaling. HARRY S. UPSHAW, *University of North Carolina*.

Hovland and Sherif have presented evidence that the attitudes of judges influence equal-appearing intervals scale values, especially the values of "neutral" items. Results of the present study support the hypotheses that: (a) the Hovland-Sherif results are attributable to inadequate coverage in their items of the attitude continuum and (b) "moderate" judges whose "own attitude" anchors are within the item (or stimulus) range displace items, but "extreme" judges with anchors outside the range do not. These results suggest that the Hovland-Sherif study should not be interpreted as invalidating the equal-appearing intervals model.

2:10. What do attitude scales measure: The problem of social desirability. JAMES BENTLEY TAYLOR, *University of Washington*.

Social desirability ratings for 127 attitude scale items were made by 53 university students. Another 58 students answered the items on an "agree-disagree" basis. An analysis of the responses showed that: definite social desirability norms exist for attitude scale items, there is a correlation of .74 between the median social desirability value of an item and the probability that the item will be endorsed, willingness to endorse undesirable items is a general response tendency, and there are substantial correlations between a measure

of this general response tendency and scores on five of the six attitude scales studied.

2:20. The interpretation of opinion statements as a function of message-ambiguity and recipient-attitude. MELVIN MANIS, *VA Hospital, Ann Arbor, Michigan*.

Subjects judged the positions advocated in a variety of statements concerning college fraternities; these messages were presented in ambiguous (mutilated) and unambiguous versions. Similar relationships between recipient-attitude and message interpretation were obtained under both conditions, although ambiguity consistently produced displacements toward the midpoint of the scale.

2:30. Attitude-consonant inhibition of fantasy aggression in individuals low in anti-Semitism. DONALD WEATHERLEY, *University of Wisconsin*.

In order to test a hypothesis derived from the scapegoat theory of prejudice, two groups of male college students, differing in degree of anti-Semitism, were subjected to an aggression arousing situation following which they were given the opportunity to express fantasy aggression toward characters with Jewish and non-Jewish names. Matched control subjects took the fantasy test without prior aggression arousal. The results showed that, while aggression arousal had no apparent effect on the fantasy aggression of the high A-S subjects, it evoked a specific inhibition of fantasy aggression toward Jewish characters in low A-S subjects.

## Division 7. Reinforcement and Problem Solving

3:00-3:50. Venetian Room, Morrison

JUDY F. ROSENBLITH, *Brown University*, Chairman

3:00. Some relationships of schedules of reinforcement to "creativity." CURTIS L. MCCRAY AND ROBERT S. HARPER, *Knox College*.

Creativity is characterized by (a) persistent goal orientation, (b) inventiveness in reaching the goal, and (c) a tendency to be dissatisfied with an initially satisfactory solution. By defining Characteristic *a* as resistance to extinction, Characteristic *b* as the means used in circumventing a barrier, and Characteristic *c* as the variability in the means employed in circumventing the barrier, "creativity" was investigated behaviorally. Children were conditioned to bar pressing on regular, fixed ratio, and variable ratio schedules. A puzzle box (consisting of four devices, any one of which, when manipulated, would activate the

bar) was then interposed between the subject and the bar. "Creativity" was shown by the subjects conditioned on variable ratio.

- 3:10. The effects of verbal reward and verbal punishment on concept elicitation in children. PAUL W. SULLIVAN, *Wayne State University*.

Groups (20 subjects each) of 5-, 7-, 9-, and 11-year-old children served in an experiment to assess the effects of verbal reward and punishment on response acquisition in a concept elicitation task. Each age group was subdivided into four treatment groups: I, reward following responses in a predetermined "correct" response class; II, punishment following responses in the incorrect class; III, reward and punishment combined; and IV, a nonreinforcement control group. Results indicated that the effectiveness of verbal reward became manifest only at the later ages and that verbal punishment was more effective than verbal reward at all age levels studied.

- 3:20. The effect of delay of reward on size and form discrimination learning in children. GLENN TERRELL AND ROBERT WARE, *University of Colorado*.

Five- and six-year-old children learned size and form discriminations of varying difficulty significantly more quickly ( $p < .001$ ) when rewarded immediately following correct responses than when rewarded following a 7-second delay. Conclusions are drawn suggesting the applicability of the Hullian formulation concerning delay of reward to discrimination learning in childhood. It is suggested that both associative and incentive ( $H$  and  $D$ ) factors are involved in the difference in speed of learning under the two conditions.

- 3:30. Rigidity, negative reaction tendencies, and cosatiation effects in normal and feeble-minded children. PATRICIA SHALLENBERGER AND EDWARD ZIGLER, *University of Missouri and Yale University*.

The following hypothesis was advanced to explain the lessened cosatiation effects found in the performance of feeble-minded individuals: Institutionalized feeble-minded subjects begin Task 1 with a negative reaction tendency higher than that of normal subjects. This higher negative reaction tendency is due to a wariness of adults which stems from the more frequent negative encounters that feeble-minded subjects experience at the hands of adults. If the feeble-minded child's performance on Task 1 meets with support, his negative reaction tendency is reduced more than is his positive reaction tendency with a

lengthier performance on Task 2 resulting. Three predictions were derived and verified.

- 3:40. Scaling children's incentives by the method of paired comparisons. SAM L. WITRYOL AND WILLIAM F. FISCHER, *University of Connecticut*.

Preferences for five incentives consisting of bubble gum, balloons, charms, marbles, and paper clips were determined for 27 nursery school children who rated the objects by means of the method of paired comparisons. The mean of Kendall's coefficients of consistency calculated was .84, and the coefficient of agreement was .40—significant beyond the .001 and .01 levels, respectively. Scale positions calculated by Guilford's short cut method reflected preferences for the incentives in the order listed above. These positions are congruent with published laboratory reinforcement studies of children, suggesting an economical approach for predetermining reward values.

#### Division 8. Interpersonal Perception

3:00-3:50. Jade Room, Sherman

SIDNEY ROSEN, *Marquette University*, Chairman

- 3:00. Explorations in the process of person perception: Visual interaction in relation to competition, sex, and  $n$  affiliation. RALPH V. EXLINE, *University of Delaware*.

Visual interaction was studied in groups of men and groups of women by composing groups according to  $n$  affiliation and assigning them to different competitive conditions. Observers agreed over 80% as to the frequency and duration of visual fixations recorded as a group worked on a standard task. Visual interaction was conceptualized as mutual glancing and looking while speaking (directed glances). Results showed women to be higher in both mutual and directed glances. Significant interaction between sex and affiliation was found for mutual glancing, and between sex/competition and sex/affiliation for directed glances. Results are discussed in terms of costs and rewards.

- 3:10. Factors related to the perception of "Jewishness." SAMUEL HIMMELFARB, *University of California, Los Angeles*. (Sponsor, Bertram H. Raven)

Previous investigations have suggested that anti-Semitism, religion of subjects, and the artifact of response bias in using the labels "Jew" and "non-Jew" are all related to differences in accuracy of judging photographs of males as "Jewish" or "non-Jewish." A study was performed to investigate the



factor of the sex of the photograph as related to the above variables. The female photographs yielded significantly lower accuracy scores than the male photographs. It is suggested that the stereotype of a Jew is predominantly masculine for all subjects. A method for eliminating the artifact of response bias is presented.

- 3:20. The effects of interpersonal expression of needs on sensitivity to needs in others. PETER B. LENROW, *Harvard University*. (Sponsor, Herbert C. Kelman)

Sympathetic sensitivity to others' needs is viewed as a product of (a) the expectation that one has experience in common with others and (b) the acceptance of one's own feelings of need as part of oneself. It is proposed that these tendencies, respectively, are increased when one's feelings of need are (a) aroused in interpreting another's experience and (b) accepted by another person. An experiment with young adults provided these conditions through controlled interpersonal relationships in role play. The main hypothesis was confirmed for women. The results for men were consistent with child training and cultural expectations specific to men.

- 3:30. In defense of the use of stereotypes. WAYMAN J. CROW, *Western Behavioral Sciences Institute*.

The use of stereotypes has acquired an inappropriate implication. Early research focused upon ethnic stereotypes which are notoriously inaccurate, and evidence for accurate stereotypes was minimized for ideological reasons. This history may repeat itself in the study of person perception. Stereotype accuracy is called an artifact, and ideological justification for stressing the uniqueness of personalities leads to a research preference for differential accuracy. Existing evidence indicates that stereotyped accuracy is superior to differential accuracy in some situations. Training programs may decrease accuracy by influencing trainees to abandon their use of stereotypes.

#### Division 8. Discussion Group: New Frontiers in Person Perception Research

3:00-4:50. Old Chicago Room, Sherman

VICTOR B. CLINE, *University of Utah*, Chairman

Participants: PAUL SECORD, *University of Nevada*; PAUL HOFFMAN, *University of Oregon*; FRED FIEDLER, *University of Illinois*; JOAN CRISWELL, *ONR Group Psychology Branch*; JAMES M. RICHARDS, *University of Utah*; RICHARD FARSON, *Western Behavioral Science Institute*; AND LAWRENCE SOLOMON, *Western Behavioral Science Institute*.

#### Division 12. Alcoholism

3:00-3:50. The Assembly, Sherman

SEYMOUR G. KLEBANOFF, *Roosevelt VA Hospital*, Chairman

- 3:00. Developmental and behavioral differences between "essential" and "reactive" alcoholics. LAURENCE S. MCGAUGHRAN AND RICHARD R. RUDIE, *University of Houston and Moose Lake State Hospital, Minnesota*.

This study was an attempt to provide a broader empirical base for Knight's clinical distinction between "essential" and "reactive" alcoholics. Questionnaire items used to establish criterion groups were based upon Knight's clinical descriptions. Subjects were 58 alcoholic males. The reactive alcoholics showed greater overall defensiveness and a more complex defensive system emphasizing intellectualization and denial. On the basis of coded interview material, essential alcoholics "scored" higher on culture-combativeness, conflict with parents, unstable-unrewarding home, sibling conflict, lability of feeling, marital difficulties, and hedonism. Reactives "scored" higher on overall achievement, educational and occupational accomplishment. Age, education, and intelligence were controlled.

- 3:10. Factors related to continuation and improvement for alcoholics in outpatient treatment. BLAINE F. KEPNER, *Cleveland Center on Alcoholism*. (Sponsor, Mildred Weiss)

Social, psychological, and drinking pattern characteristics of a sample of 88 alcoholic subjects in outpatient treatment were analyzed in terms of two treatment outcome measures: length of stay and improvement in the direction of abstinence. Significant differences were found between Remainers and Terminators and between Improved and Unimproved groups on each of the variables studied. It was also noted that psychological changes accompanied sobriety, this change being measured by test-retest difference scores on the Minnesota Multiphasic Personality Inventory. Subjects who had achieved sobriety were less depressed, less anxious, and more self-confident than those who continued to drink.

- 3:20. Defining the alcoholism syndrome. MAURICE KORMAN, *University of Texas Southwestern Medical School*.

Is there a cluster of traits or behaviors which define alcoholism? The definitions of alcoholism in current usage are loosely woven and generally stress such indicators as excessive, habitual, long term alco-



hol consumption with parallel mental, physical, and social deterioration. Data reflecting the physical condition, social adjustment, mental status, chronicity of the syndrome, strength of the drive for alcohol and of specific drinking behaviors were obtained from a group of outpatient alcoholics. A  $12 \times 12$  matrix yielded  $r$ 's ranging from  $-.41$  to  $.51$ ; a cluster analysis revealed two clusters with  $B$  coefficients above  $1.60$ —the first reflecting the severity of psychological, behavioral, and physical maladjustment; the second stressed the duration of the process and alcohol related diseases. Social adjustment was unrelated to either cluster.

#### Division 12. Symposium: Current Trends in Research on Schizophrenia

3:00-4:50. Louis XVI Room, Sherman

PHILIP ROOS, *Timberlawn Sanitarium*, Chairman

##### Participants:

DONALD R. GORHAM, *VA Hospital, Perry Point, Maryland*. Current trends and needs in chemotherapy research.

C. L. WINDER, *Stanford University*. Trends in behavioral research findings.

LOUIS J. MORAN AND RAY B. MEFFERD, *VA Hospital, Houston, Texas*. The search for biochemical correlates in schizophrenia.

PHILIP ROOS, *Timberlawn Sanitarium*. Current trends and needs in psychotherapy research.

Discussants: IRWIN JAY KNOPF, *University of Texas Southwestern Medical School*; AND BERTRAM D. COHEN, *Wayne State University*.

#### Division 16 Committee on Psychological Research in the Schools. Open Meeting

3:00-3:50. Embassy Room, Morrison

WILLIAM ITKIN, *Chicago Board of Education*, Chairman

#### APA. Conversation-Contact Hour

5:00-5:50. Parlor B, Morrison  
SOLOMON E. ASCH, *Swarthmore College*, Leader

5:00-5:50. Parlor C, Morrison  
DAVID G. RYANS, *University of Texas*, Leader

5:00-5:50. Parlor D, Morrison  
ARTHUR JERSILD, *Columbia University*, Leader

#### APA. Conversation-Contact Hour

6:00-6:50. Parlor B, Morrison  
JEROME S. BRUNER, *Harvard University*, Leader

6:00-6:50. Parlor D, Morrison  
RAYMOND G. KUHNEN, *Syracuse University*, Leader

#### THURSDAY EVENING, SEPTEMBER 1

#### Division 16. Dinner Meeting and Invited Address

7:00. Venetian Room, Morrison

J. R. WILLIAMS, *Kankakee Public Schools, Illinois*, Chairman

EDGAR B. PHILLIPS, *American Child Guidance Foundation, Boston, Massachusetts*. The School Psychologist and Child Guidance: New Developments in Interdisciplinary Work.

#### Division 13. Symposium: Problems of Relationships and of Ethics in Psychological Practice

8:00-9:50. Grand Ballroom, Sherman

JOSEPH E. MOORE, *Georgia Institute of Technology*, Chairman

##### Participants:

HERBERT SILVERMAN, *VA Mental Hygiene Clinic, Detroit*. Problems and issues in part-time private practice.

JAMES F. T. BUGENTAL, *Psychological Service Associates, Los Angeles*. Problems and issues in group practice.

WENDELL F. WOOD, *International Harvester Company*. Problems and issues for the psychologist full-time in industry.

EDWARD M. GLASER, *Glaser, Snowden, & Associates*. Problems and relationships of the consultant to business and industry.

#### FRIDAY MORNING, SEPTEMBER 2

#### Divisions 8, 9, and 18. Symposium: Behavior in Response to Health Threats: A Theoretical Model and Related Research

9:00-10:50. Hollywood Room, Morrison

RICHARD CHRISTIE, *Columbia University*, Chairman

## Participants:

GODFREY M. HOCHBAUM, *United States Public Health Service*. A theoretical model to coordinate research on human behavior in the health area.

IRWIN M. ROSENSTOCK, *United States Public Health Service*. Research on determinants of health behavior.

PAUL ROBBINS, *United States Public Health Service*. Some exploration into the nature of anxieties about illness.

HOWARD LEVENTHAL, *Yale University*. Implications of the model and related research for the development of a theory of behavior in the face of health threats.

Discussants: JOHN R. P. FRENCH, *University of Michigan*; AND MURRAY HORWITZ, *New York University*.

#### Divisions 8 and 12. Symposium: Contributions of Experimental Psychology to the Study of the Interview

9:00-11:50. Louis XVI Room, Sherman

JOSEPH ZUBIN, *Columbia University*, Chairman

## Participants:

ROBERT B. MALMO, *McGill University*. The interview and physiological recording.

JOSEPH D. MATARAZZO, *University of Oregon Medical School*. Temporal aspects of interview behavior.

FRANK AULD, JR., *Wayne State University*. Content analysis as a way of quantifying interview behavior.

HENRY L. LENNARD AND ARNOLD BERNSTEIN, *Columbia University*. The interview as an informational exchange system.

KURT SALZINGER, *Columbia University*. Experimental analysis of the interview in terms of learning theory variables.

Discussants: CHARLES E. OSGOOD, *University of Illinois*; AND JOEL GREENSPOON, *Florida State University*.

#### Division 12. Assessment Procedures

9:00-10:50. The Assembly, Sherman

SAUL B. SELLS, *Texas Christian University*,  
Chairman

9:00. Clinical assessment problems and procedures: A national survey. NORMAN D. SUNDBERG, *University of Oregon*.

A survey of testing practices in 186 clinical settings in 1959 was analyzed and compared with sur-

veys done in 1935 and 1946. The five different settings—VA stations, hospitals and institutions, outpatient clinics, counseling centers, and university affiliated clinics—were compared with each other. The ten most widely used tests in order were the Rorschach, Draw-A-Person, TAT, Bender, Stanford-Binet, WAIS, MMPI, Wechsler-Bellevue, Draw-A-Man, and WISC. Among the most used 20 tests there has been a turnover of 76% in the last 24 years. Questions are raised about reasons for test popularity and implications for training.

9:10. The stability of individual psychiatric patient's scores upon successive testings on the Minnesota Multiphasic Personality Inventory. JAMES R. KILAND, *VA Hospital, St. Cloud, Minnesota*.

Eleven consecutive admissions to a VA Neuro-psychiatric Hospital were tested, using the Minnesota Multiphasic Personality Inventory card form, the week of their admission and at weekly intervals thereafter until ten profiles were obtained for each subject. These 110 profiles were randomized and presented to eight staff psychologists for interpretation. Only at the least specific level of diagnostic differentiation (neurotic, psychotic, character disorder, normal, and invalid) was interjudge agreement sufficient to warrant the sequential analysis of successive testings. Even at this level the frequency of diagnostic change was such that the MMPI's usefulness in the making of diagnostic inferences must be seriously questioned.

9:20. MMPI scatter as an index of maladjustment. LUCIANO L'ABATE, *Washington University School of Medicine*.

If maladjustment is assumed to be the sum total of deviations from the means of various personality dimensions, the MMPI scatter based on 9 clinical scales could be employed as a reliable index of maladjustment. The larger the scatter, the more severe should be maladjustment. Scatters of group profiles available in representative studies suggest that various psychiatric categories may possess different scatters, with normals showing the smallest scatter of all groups. In studying the antecedent probability and efficiency of scatter and cutting scores on two samples of patients and normals, significant percentages of patients and normals were correctly diagnosed.

9:30. The role of learning and motor abilities in the Wechsler-Bellevue Digit Symbol subtest. BERNARD I. MURSTEIN, *University of Portland*.

Do both learning and motor ability contribute significantly to score achieved on the Digit Symbol

subtest? Four variables were used: motor test, learning test (both contained DS-type figures), Wechsler-Bellevue Form II DS subtest, and IQ equivalent scores. Subjects were 192 students, half from fourth grade, half from twelfth grade. Highest correlation was DS and motor (.55 fourth grade; .52 twelfth grade). Using a multiple prediction method it was found that the other variables (learning and IQ) showed no significant increase over the simple motor versus DS correlation (DS vs. Learning, Motor, IQ: .62 fourth grade; .55 twelfth grade).

- 9:40. The "meaning" of the Bender-Gestalt Test designs: A study in the use of the semantic differential. ALEXANDER TOLOR, *Fairfield State Hospital*.

The connotative meaning of the Bender designs was studied using the semantic differential. Twenty scales were administered to 68 undergraduate students. The subjects' responses on each seven-point scale were dichotomized, and chi square tests were computed to determine the differences between the incidence with which each polar end of the scale was selected. For the total sample 79 chi square values out of a total of 180 were significant. There were no sex differences but marked differences with which the stimuli lent themselves to categorization. The direction and intensity of assigned meanings were also determined by an analysis of the factors represented by the scales. The relationships between previous interpretations of the Bender figures and present findings are discussed.

- 9:50. Assessment of patients: A comparison of various sources of information. MIRIAM HOROWITZ, *University of California, Los Angeles*. (Sponsor, Charles Y. Nakamura)

The problem was to investigate the accuracy of personality descriptions yielded by various sources of information. The criterion against which these sources were judged were therapist descriptions made after a minimum of 20 hours of therapeutic acquaintance with a patient. The six sources evaluated were: clinicians' descriptions from brief biographical information, clinicians' descriptions from biographical information plus a test battery, base-rate descriptions, descriptions by naive judges from biographical information, descriptions by naive judges with no information except sex and that the person was in therapy, and patient self-descriptions. In addition, item analyses were done.

- 10:00. Differential response patterns of psychotics and normals on a test of feeling intensity. GEORGE O. BAEHR, *University of Chicago*.

A group of 120 hospitalized psychotics and 87 industrial normals were compared to test the hypothesis that such persons have characteristic response patterns to a pleased-unaffected-troubled scale as employed in a questionnaire designed to measure emotional health. Twenty-seven response patterns were identified and grouped into six types. It was found that the industrial group was characterized by two types of response patterns: Pick-up ( $p = .001$ ), Level ( $p = .089$ ); the hospitalized group by four types of patterns: Minimum ( $p = .016$ ), Tail-off ( $p = .082$ ), Peak ( $p = .195$ ), Valley ( $p = .001$ ). It was further found that (with two exceptions) each of the 27 response patterns predicts in the direction of its general type.

- 10:10. Speech disturbances and content analysis categories as indices of underlying emotional states of patients in psychotherapy. GENE SCHULZE, GEORGE F. MAHL, AND EDWARD J. MURRAY, *Yale University and Syracuse University*.

This study compared expressive measures (Speech Disturbance Levels) and Manifest Content Analysis Ratings of patient utterances in 17 psychotherapy hours of three psychoneurotics to evaluate their agreement in assessing ongoing emotional states. The Speech Disturbance Level, considered to be a sensitive indicator of anxiety, was negatively related to content measures of anxiety in one case and unrelated in the other two. Speech Disturbances were related to other Content Categories in patient-specific patterns. In one patient the Speech Disturbance Level was significantly higher following mild probes by the therapist than following expression of mild approval.

## Division 17. Contributed Papers I

9:00-9:50. Parlor B, Morrison

ROY B. HACKMAN, *Temple University*, Chairman

- 9:00. Bases for occupational choice in elementary school. ROBERT P. O'HARA, *Boston College*.

To date career development theory postulates a fantasy period extending through childhood to about the sixth grade. From Grade 6 through Grade 12 stages are denominated, by the basis for choice, as interest, aptitude, and value. This report on 1,200 boys and girls presents evidence for the existence of choices in Grades 4, 5, and 6 based on interest, values, aptitudes, and family. These choices seem more reality oriented than had been previously thought. Changes in bases for boys and girls follow different patterns.

Differences in bases were also noted between groups of high, middle, and low intelligence boys and girls.

- 9:10. The counseling role of college and university counseling centers. ROY E. WARMAN, *University of Texas*.

This study identifies differences among views of staffs of 21 college and university counseling centers about appropriateness of various problems for discussion by counselees with counselors. Significant differences between centers are obtained on each of three factors: College Routine, Vocational Choice, and Adjustment to Self and Others. In general, Vocational Choice is considered most appropriate, followed by Adjustment to Self and Others and College Routine. Vocational Choice is rated less appropriate at training centers than at nontraining centers, with a similar tendency on College Routine. Differences on the Adjustment factor are related to institutional size, not training status of the center.

- 9:20. Counselor vs. statistical prediction of job satisfaction in engineering. EDWIN C. LEWIS AND ARTHUR C. MACKINNEY, *Iowa State University*.

This study compares counselor and statistical predictions of engineering job satisfaction using tests and biographical predictors. A short but highly reliable job satisfaction blank was administered to a sample of 70 engineers on whom the predictors were available from college records. College counselors made estimates of future job satisfaction based on the predictors; all variables were intercorrelated and a regression prediction was made. Results indicate that an actuarial prediction of job satisfaction is more valid than counselor prediction. A combination of the most valid predictors yielded a shrunken multiple correlation of .56 with the criterion.

- 9:30. Some relationships between age and self-perception. KENNETH L. BLOOM, *Teachers College, Columbia University*.

The literature is replete with references to decline in the physical, social, economic, and personal areas with age. This study theorizes that differences in self-perception accompany those observed at different periods of life. Ideal-self-, past-self-, present-self-, and future-self-perception scores of 83 white males were correlated with chronological age and with self-ratings of perceived age. Past-self-perceptions were positively correlated with chronological age indicating that as individuals age they tend to idealize their pasts. A curvilinear relationship between present-self-perceptions and chronological age lends support to both the theory of life stages and that of time perspective.

## Division 20. Research Papers

9:00-11:50. Walnut Room, Morrison

IVAN N. MENSCH, *University of California, Los Angeles*; AND JACOB TUCKMAN, *Department of Public Health, Philadelphia*, Chairmen

- 9:00. Changes in ego process in later life. DAVID L. GUTMANN, *University of Chicago*.

Blind analysis of projective data from 144 urban males, aged 40-70, suggests that the ego state of younger respondents (aged 40-54) differs significantly from that of older men (aged 55-70). Younger men deal actively with the external world, their ego defences are consistent with vigorous action, and they are motivated by "ego-ideal" considerations in that they seek validation of their masculine competence. Older men are autoplasmic in their dealings with the external world, ego defences stress magical denial rather than adaptive action, and they are motivated by "superego" considerations in that they seek to demonstrate their moral rectitude.

- 9:10. Age-related personality differences and social interaction. ALEXEY SHUKIN, *University of Chicago*.

This study deals with the age-related personality differences in 129 noninstitutionalized subjects aged 50 to 70, subdivided by sex and social class. The disengagement theory of aging states that with age there is a movement from social involvement toward a lessened amount and variety of social interaction. Thirteen personality variables based on this theory were utilized. Data consisting of age-blinded interviews and TATs showed age differences for eight of these variables. Implications of these findings are discussed.

- 9:20. The timing of basic role changes in adulthood: A study of 242 middle-aged men and women. KENNETH M. OLSEN, *University of Chicago*.

This is a study of patterns of timing of events marking major family and occupational role changes for 120 men and 122 women, aged 40 to 70 years, drawn from the various social class levels in a metropolitan area. The events include completion of formal education, leaving the parental home, marriage, birth of first child, first full-time job, the beginning of occupational decline, and reported onset of menopause. Sex, social class, social mobility, and generational differences are shown, and their relevance for the study of aging and adult life in American society is considered.



9:30. Age differences in judgments of chronological age. NATHAN KOGAN, *Educational Testing Service*.

A host of studies have demonstrated that perceptual judgments of object magnitude are influenced by "value" variables. Extending this work to the area of person perception, the present research inquires whether the value laden physical dimension of age generates differences between younger and older judges in chronological ages attributed to others. Subjects (college undergraduates and noninstitutionalized older persons) estimated the chronological ages of stimulus persons (photographs). Of the 72 possible photograph comparisons, 25 were statistically significant ( $t$  test) in the direction of a higher age estimate by older subjects, while only four were significant in the opposite direction.

10:00. Multidimensional analysis of emotionally toned stimuli. RAYMAN W. BORTNER AND RAYFORD T. SAUCER, *VA Center, Kecoughtan, Virginia*.

Theoretically, nonserial matching should provide an estimate of the number and magnitude of the psychological dimensions of any set of stimuli. This has been demonstrated with neutral pictures using Andrews' A Technique. The present experiment is designed to explore this hypothesis where the stimulus pictures might have dynamic meaning for the individual. Factor analysis of nonserial matchings of the Caldwell Picture Series has been carried out. Methodologically, the results suggest that projective material is amenable to treatment by multidimensional analysis. Substantively, it appears that certain meanings seem to be shared by a group of relatively aged, institutionalized individuals.

10:10. The effect of age on the relationship between different types of rigidity: Two methods of analysis compared. SHEILA M. CHOWN, *University of Liverpool*.

Thirteen tests of rigidity, one of vocabulary, and the Raven Progressive Matrices were given to 200 men aged between 20 and 82. Method 1: A principal components factor analysis was carried out on the correlation matrix derived from scores (including age) for the whole group. Rotations maximized the loadings on age and nonverbal intelligence as separate factors. Method 2: Three age groups of 60 subjects were drawn from the main sample; with age partialled out, the relationships between scores within the groups were examined by principal component analyses and the three sets rotated into maximum agreement. The efficacy of the two methods is discussed.

10:20. Relationship between apparent motion perception and functional efficiency. NEIL W. COPPING AND RAYFORD T. SAUCER, *VA Center, Kecoughtan, Virginia*.

Although it has been shown that a deficit in the perception of apparent motion can be related to psychopathology and aging, research has been hampered by lack of standardized stimuli and lack of knowledge concerning applicable statistical procedures. It has been found that an easily duplicated stimulus pattern will yield a log-normal distribution of motion perception thresholds which are a function of the global behavioral efficiency of the individual. Analysis of variance supports the latter conclusion at the 5% level of confidence.

10:30. Interference effects on Stroop color-word test in two groups of aged, one institutionalized and the other living in the community. PETER E. COMALLI, JR., SEYMOUR WAPNER, AND HEINZ WERNER, *Clark University*.

A modified Stroop color-word interference test was administered to two groups of aged persons between the ages of 65-82. One group consisted of institutionalized aged persons; the other group consisted of aged persons living in the community. Interference effects were found to be greater with the institutionalized group than with the group living in the community. These findings are discussed in terms of the developmental notion of "regression."

11:00. Reactime time and age: Some preliminary intermodal studies. ALASTAIR HERON, *University of Liverpool*.

The literature on reaction time reveals a notable tendency for investigators to become preoccupied with a single stimulus modality, usually visual or auditory. This practice is most marked among the relatively few studies taking age into account. The preliminary investigations now reported were designed to probe the possibilities of intermodal studies of reactime time in relation to age, with special reference to the effects of variation in the program of stimulus presentation.

11:10. Hunger in rats in relation to age. JOSEPH F. BRINLEY, *National Institute of Mental Health*.

Food deprivation might be expected to have different effects on animals of different ages. Body weight, food consumption, and wheel running of rats in different age groups were measured during ad libitum feeding and again after adaptation to a 23-hour deprivation schedule. Data were obtained from female Sprague-Dawleys, 4 aged 3½ months, 5 aged about 1 year, and 5 aged about 2 years. No age difference

appeared in percent weight loss during deprivation. Strength of hunger defined in relation to food consumption and wheel activity appeared the same for all groups.

- 11:20. Locomotion and exploration in rats as a function of age. STANLEY WECHKIN, ERNEST FURCHTGOTT, AND JAMES W. DEES, *University of Tennessee*.

Open-field locomotion, sniffing at objects (exploration), starting latency, and defecation were measured on three consecutive days in very young (aged 35 days,  $N=77$ ), young adult (aged 150 days,  $N=76$ ), and older (aged 365 days,  $N=46$ ) albino rats. There were significant decreases in locomotion and exploration and an increase in latency with age. The differences increased from the first to the third testing days. It is hypothesized that adaptation to novel stimulation is more rapid in young than in old animals.

- 11:30. Position learning and habit reversal in relation to age. JACK BOTWINICK, JOSEPH F. BRINLEY, AND JOSEPH S. ROBBIN, *National Institute of Mental Health*.

Old and middle aged Sprague-Dawley female rats (approximately 2 and 1 year, respectively) were compared in learning a series of position reversals in a single unit Y maze. Motivation consisted of approximately 20 hours of food deprivation. Animals were run five trials per day continuously until the experiment was completed. The learning criterion was four correct trials on three successive days. Each animal learned the original position response and a maximum of eight position reversals. Data to date indicate no age difference in rate of learning original position response. More old rats than middle aged ones, however, had poorer reversal performance.

## Division 22. Research in Rehabilitation

9:00-10:50. Emerald Room, Sherman

C. H. PATTERSON, *University of Illinois*, Chairman

- 9:00. A developmental study of conceptual choice behavior in deaf and hearing children. HANS G. FURTH, *University of Portland*.

Developmental growth curves of deaf and hearing children between the ages of 6½ and 12½ were compared on five concept formation tasks consisting mainly of alternate choices and requiring no language. On the "Sameness" and "Symmetry" tasks, where previous language experience appears to be minimally helpful, the deaf were superior; while on the

"Opposition" task and "Paired Associates" their performance was below that of the hearing group. The results, suggesting that the deaf have no direct deficit in abstract thinking, are explained within the framework of a facilitative but not necessary role of language in thinking.

- 9:15. Body image changes in physically handicapped children due to summer camp experience. RAYMOND H. HOLDEN, *Child Development Program, Providence, Rhode Island*.

The importance of the concept of body image is increasingly being recognized in the fields of psychiatric and psychological rehabilitation. The purpose of the present study is to evaluate changes in body imagery of cerebral palsied and post-poliomyelitis children as a result of a two-week summer camp experience. The subjects were 48 boys and 49 girls, ages 7-12. All subjects drew a person at the beginning and end of the camping period. Results indicated that judges could differentiate "after" camp drawings at a level significantly higher than chance (.01). There was a significant correlation ( $\rho = .40$ ) between judges' choice of "after" camp drawings and counselors' ratings of improvement after camp.

- 9:30. Correlates of adjustment to paraplegia. EILEEN T. NICKERSON, *Harvard University*.

This study investigated some correlates of adjustment to paraplegia. It was hypothesized that adjustment to paraplegia is positively related to fantasy capacity, verbal intelligence, amount of education, socioeconomic level, introversion personality traits, and theoretic and aesthetic interests. Adjustment to paraplegia was found to be significantly correlated with amount of education, socioeconomic level, and theoretic interests. Fantasy capacity, verbal intelligence, and introversion traits were not significantly related to paraplegia. From these results, it appears that the patient who was better able to adjust to a physically immobilizing disability was the patient who was better able to function in society prior to his disability, as attested to by his relatively higher educational and occupational attainments. Such a patient, as hypothesized, is also more motivated by theoretic values.

- 9:45. Disability types and behavior. H. E. YUKER, J. R. BLOCK, AND W. J. CAMPBELL, *Human Resources Foundation, Albertson, New York, and Hofstra College*.

Close to 300 disabled persons employed at Abilities Inc., a manufacturing plant employing only disabled persons, were used to investigate the relationship between disability type and various aspects of behavior.

The subjects were grouped into several disability categories such as multiple vs. single disability, number of extremities involved, sensory vs. nonsensory disability, etc. These classifications were compared in terms of 17 demographic, personality, and employment variables, including such factors as marital status, self-concept, and attendance. Of approximately 100 chi square tests run, only 10% were significant at the .05 level or beyond. Most of these were neither theoretically meaningful nor predictable.

10:00. Personality correlates of public attitudes toward blindness. MARTIN WHITEMAN AND IRVING F. LUKOFF, *Columbia University*.

A number of hypotheses relating components of attitudes toward blindness to more general personality tendencies were explored. The subjects comprised 109 individually-interviewed respondents from middle and low income housing projects. An analysis of the attitude-toward-blindness items revealed several statistically discrete clusters which were then related to the most reliable personality indices. Relationships were obtained between negative attitudes toward blindness and a cluster of interrelated indices tapping tendencies to anxiety, anomia, authoritarianism, disinterest in planning, minority intolerance, and low intelligence. Personality measures correlated with class and educational differences seemed most predictive of attitudes to blindness.

10:15. The role of the family in the process of vocational rehabilitation. WALTER S. NEFF, *Jewish Vocational Service, Chicago, Illinois*.

This paper summarizes the results of one aspect of an intensive field follow-up of 200 clients who had been in a rehabilitation process which focuses upon the use of a simulated work situation to facilitate a transition to work. The clients were emotionally disturbed and/or mentally limited persons, who had been referred to the rehabilitation agency as "unemployable." Ratings of "family support" were made through interviewing both the client and his family, one to two years after he left the program. The chief result is that the nature of the relationships between the client and his family appears to influence the outcome of vocational rehabilitation. The implications of this finding are discussed.

#### Division 8. Anxiety and Threat I

10:00-10:50. Crystal Room, Sherman

ELLIOT G. MISHLER, *Joint Commission on Mental Illness and Health*, Chairman

10:00. Individual variations in verbal and physiological reactions to threat. GEORGE MANDLER, JEAN M. MANDLER, IRWIN KREMEN, AND ROBERT D. SHOLITON, *Center for Advanced Study in the Behavioral Sciences and Harvard University*.

The verbal and physiological responses of college students to threatening phrases (Heath's Phrase Association Test) were examined to test a theoretical classification of defensive behavior which stresses the degree to which a subject becomes personally involved with the content of the threat. As predicted, subjects who tend to avoid the task showed more behavioral and physiological interferences than those who do not. Subjects who, in their response, change the meaning of the stimulus show less physiological response than subjects who do not. Conversely, tendencies to become involved with the content of the stimulus are positively correlated with degree of somatic reaction.

10:10. A comparison of the effects of three kinds of stressors on human learning and performance. RONALD B. KURZ, *Syracuse University*.

The purpose of this experiment was to compare the effects of three stress producing operations on learning and performance. Subjects performed a series of mental multiplication problems while they were either paced, shocked, distracted, or not subjected to any stressor conditions. It was found that pacing resulted in significantly fewer multiplication errors and significantly more rapid responding than the other conditions. The data indicate that the effects of pacing differ from those of shock and distraction and fail to support the assumption that all stressors produce a common effect. The implications for current conceptualizations of "drive" and "stress" are considered.

10:20. Fear, affiliation, and social comparison. HAROLD B. GERARD AND JACOB M. RABBIE, *Bell Telephone Laboratories and Yale University*.

The subject was exposed to the anticipation of receiving strong or weak electrical shocks. He received either information about his emotional state and those of the three others present in adjoining cubicles, information about his own emotionality, or no such information. His tendency to affiliate or seek isolation was measured as were other motives which might underlie his need to affiliate. Support was discovered for a social comparison hypothesis to account for affiliation. An analysis of the relationship between birth order and affiliation revealed that first-born and only females tend to affiliate more strongly than later borns. The reverse appears for males.

10:30. Anxiety, birth order, and susceptibility to social influence. FREDERICK R. STAPLES AND RICHARD H. WALTERS, *University of Toronto*.

To test the hypothesis that anxiety increases susceptibility to social influence, female undergraduates were exposed to the autokinetic situation under anxiety-arousing and under non-anxiety-arousing conditions. Half of the anxious and half of the non-anxious subjects were first-born; the remaining subjects were later-born. Before the anxiety condition was introduced, first-born subjects were more suggestible than later-born subjects. The introduction of anxiety increased suggestibility in first-born subjects, but not in later-born subjects. These results, in general, support hypotheses advanced in Schachter's *Psychology of Affiliation*.

#### Division 8. Symposium: In Search of the Alcoholic Personality

10:00-11:50. Bal Tabarin, Sherman

ALEXANDER C. ROSEN, *UCLA Medical Center*,  
Chairman

##### Participants:

A. C. ROSEN, *UCLA Medical Center*. Inconsistencies in psychological and psychiatric delineations of the alcoholic personality.

WILLIAM McCORD, *Stanford University*. A longitudinal study of the antecedents of chronic drinking.

CRAIG MACANDREW, *UCLA Medical Center*. A functional analysis of intoxication derived from sober and intoxicated self-presentations.

HERMAN WITKIN, STEPHEN A. KARP, AND DONALD R. GOODENOUGH, *State University of New York*. Experimental investigations of perceptual dependency in chronic drinking.

#### Division 16. Symposium: Achievement and Underachievement in School Children

10:00-11:50. Constitution Room, Morrison

ROBERT J. HAVIGHURST, *University of Chicago*,  
Chairman

Participants: JAMES V. PIERCE, *University of Chicago*; MERLE OHLSEN, *University of Illinois*; GEORGE MIDDLETON, JR., *McNeese State College*; JOHN GOWAN, *San Fernando Valley State College*; AND ELIZABETH DREWS, *Michigan State University*.

#### Division 16. Symposium: Follow-up of Symposium on Mental Retardation at the 1958 APA Convention

10:00-11:50. Grand Ballroom, Morrison

MURRAY TONDOW, *Science Research Associates*,  
*Chicago*, Chairman

##### Participants:

RICHARD KOCH, *University of Southern California School of Medicine*. Pediatric aspects of counseling parents of retarded children with emphasis on the mongoloid child.

MAURICE G. KOTT, *New Jersey State Department of Institutions and Agencies*. Administrative aspects of applying research findings into operation.

NATHAN S. LEICHMAN, *California State Department of Education*. New approaches in counseling with parents of mentally retarded children.

#### Divisions 17 and 22. Symposium: Social Rehabilitation of Mental Patients: Some Major Problem Areas in Conducting Research and in Motivating the "Hard to Reach" Patient

10:00-11:50. Parlor B, Morrison

VICTOR GOERTZEL, *Fountain House, New York City*,  
Chairman

Participants: GEORGE W. BROOKS, *Vermont State Hospital, Waterbury*; LEROY L. JOSEPH, *Bridgehaven, Louisville, Kentucky*; AND SAUL PILNICK, *Fountain House, New York City*.

Discussants: ABRAHAM JACOBS, *Teachers College, Columbia University*; AND BERNARD M. KRAMER, *Massachusetts Mental Health Center*.

#### Division 8. Cross-Cultural Studies

11:00-11:50. Crystal Room, Sherman

DANIEL KATZ, *University of Michigan*, Chairman

11:00. Cross-cultural studies of the socialization continuum. HARRISON G. GOUGH, *University of California, Berkeley*.

It is taken as an axiom that for any culture a socialization continuum can be defined: ranging from disapproved, illegal, and punishable behaviors at one end; to approved, encouraged, and rewarded behaviors at the other. An intriguing psychological task is to identify personality traits and qualities which are in alignment with this continuum, and from their



measurement to specify an individual's probable location on the behavioral continuum. This paper considers the extent to which a measurement approach of this type, derived from studies in the United States, can be validated in cross-cultural studies in Costa Rica, India, and Italy.

- 11:10. Intercultural attitude comparisons. HAROLD GULLIKSEN, *Educational Testing Service*.

Attitude scales on occupations, nationalities, goals of life, and reasons for work have been prepared and translated into French, German, and Dutch. All four scales have been administered to a group of school children in Belgium through the courtesy of Leopold Knops and G. de Montpellier. The occupations schedule was administered to 1,200 school children in France through the courtesy of M. Reuchlin. The occupations schedule was administered to 200 university students in Germany through the courtesy of Heinrich Roth. The results for the different countries are compared.

- 11:20. An experiment on semantic structure of the Finnish language. ALFRED G. DIETZE, *Michigan State University*.

A factor analysis of the results of judging Finnish semantic differential scales against each other yielded in the first instance a factor structure in substantial agreement with the work of Osgood and associates on other languages. However, since evaluation seems to be a universal mode of categorization, a reduced matrix from which evaluative scales were eliminated was also analyzed. This permitted other factors in addition to evaluation, potency, and activity to appear. This is suggested as a method worth trying in the attempt to discover idiosyncratic dimensions of a language.

- 11:30. Adult reactions to preferred childhood stories: A Finnish-American Comparison. EUGENE L. GAIER AND MARY JEFFERY COLLIER, *University of Buffalo and Louisiana State University*.

Comparison of the responses of Finnish ( $N = 243$ ) and American ( $N = 264$ ) university students to questions concerning their favorite childhood story indicated that the Finnish women and men and American women preferred instinct-gratifying fairy tales, often with same-sex important characters, ending happily, shared occasionally with peers, encountered in the oedipal period, and colorfully illustrated. The American men chose fiction stories of adventurous self-assertion, with inevitably same-sex, usually adult, important characters, sometimes ending unhappily,

seldom shared, encountered during latency, without colored illustrations, but subtly resembling stories chosen by the Finnish men. Consistent with Rank's hypothesis, story tastes were cross-culturally similar, especially for the women.

## Division 8. Impression Formation

- 11:00-11:50. Jade Room, Sherman

PAUL F. SECORD, *University of Nevada*, Chairman

- 11:00. Impression formation and sequence of information presentation. EDWARD R. OSTRANDER AND JOSEPH STEGER III, *Gettysburg College*.

Asch has qualitatively shown that information sequence influences the initial direction and overall impression we form of a person. This study employs the semantic differential to quantitatively measure varied sequences of positive and negative information segments on impression formation. When positive and negative information segments are sufficiently incongruous, the final impression may deviate greatly from the initial impression. Significant differences were found in impressions formed from varied sequences of positive and negative information presentations. The impression development seems influenced more by recency and the degree of perceived negativity or positiveness of the information than by initial direction.

- 11:10. Effects of set in impression formation. HARRY BEILIN, *Brooklyn College*.

This experiment is designed to determine the influence of variation in set, induced prior to presentation of varied personality attributes, upon consequent person-impression. Impressions from different induced (occupational) sets differ greatly. There is no difference in impression upon presentation of the same attribute list to two groups. Variation of a "central" attribute with prior set results in variation in impression, but the results differ depending upon the attribute and set. "Cold" has a much stronger effect in forming impressions than "warm," although more with some sets than others. "Warm" acts to reduce differences between set impressions, "cold" to enhance them.

- 11:20. The effects of set on changes in impressions of people. HOWARD LEVENTHAL, *Yale University*.

The effects of set and information discrepancies upon changes in the impressions of another person were studied in a  $2 \times 2$  factorial design. Subjects examined two sets of biographical data about another person and recorded their impressions after each. The more discrepant the second set of information was

with the first, the more difficulty subjects experienced with it and the greater the change in their liking for the other person. Subjects set to communicate their impressions, but unprepared for the discrepant information, were more accepting of it than subjects who had been prepared to receive information. The receivers had more difficulty with the additional material and also formed more complex final impressions than did the transmitter groups.

11:30. Subjects' perception of their experimenter under conditions of experimenter bias. ROBERT ROSENTHAL, KERMIT L. FODE, C. JACK FRIEDMAN, AND LINDA L. VIKAN, *University of North Dakota*.

Recent studies in experimenter bias have shown that experimenters are able to obtain from their subjects the data that experimenters need or expect to get. Twelve biased experimenters each performed an experiment in "person perception" using a total of 58 subjects. More highly biased experimenters were perceived by their subjects as significantly more "likeable," "personal," "interested," "slower speaking," and more given to the use of "hand," "head," and "leg gestures." All 26 of subjects' ratings of experimenters were intercorrelated and cluster analyzed. Our findings and their implications for future research on experimenter bias and on subject perception of experimenter are discussed.

#### Divisions 8 and 12. Symposium: Phenomenological Conceptions of Personality

11:00-12:50. Grand Ballroom, Sherman

ALFRED E. KUENZLI, *Southern Illinois University*,  
Chairman

##### Participants:

C. H. PATTERSON, *University of Illinois*. The self in recent Rogerian theory.

F. P. KILPATRICK, *Brookings Institution*. Personality in transactional psychology.

ABRAHAM S. LUCHINS, *University of Miami*. Ego structure in gestalt theory.

RICHARD JESSOR, *University of Colorado*. Social learning and personality.

Discussant: TED LANDSMAN, *University of Florida*.

#### FRIDAY AFTERNOON, SEPTEMBER 2

##### Division 8. Personality Differences II

12:00-12:50. Crystal Room, Sherman

JAMES K. DENT, *Wayne State University*, Chairman

12:00. Psychosocial factors related to differential social mobility. ROBIN LOBECK AND JAMES BIERI, *Columbia University*.

The relationships of attitudes toward authority and degree of dominance in the self-concept to social mobility were analyzed as a function of religious affiliation (Catholic or Jewish) and origin of father in 96 men. Jewish subjects were more mobile than Catholic subjects, and subjects with foreign born fathers were more mobile than subjects with United States born fathers. Dominance feelings were inversely related to degree of mobility. Acceptance of authority is negatively related to mobility in the Jewish group, but educational attainment is an important factor here. A compensatory reaction to reference group conflicts in mobility behavior is suggested.

12:10. Personality correlates of certain body schema dimensions. SEYMOUR FISHER, *Baylor College of Medicine*.

To determine if there are personality correlates of three body schema dimensions linked with spatial aspects of the body, previously validated techniques were used to measure the body schema dimensions. Personality consistencies were evaluated by means of a battery of ten tests. Subjects were 173 adults. Each body schema dimension evidenced personality correlates. Thus, a head-body dimension was linked with egotistic vs. altruistic tendencies, a front-back dimension was related to ability to be expressive, and a dimension involving the upper half of body vs. lower half of body was correlated with degree of role conflict.

12:20. The effect of need achievement and fear of failure on probability preferences. LAWRENCE W. LITTIG, *University of Buffalo*.

Certain hypotheses about probability preferences associated with high need achievement (TAT) and with high fear of failure (Mandler-Sarason Test Anxiety Questionnaire) were tested in a game of chance. Subjects bid competitively for opportunities to win points by beating, with dice throws, a series of randomly sequenced number combinations having these probabilities of being beaten: 1/10, 3/10, 5/10, 7/10, 9/10. Preferences were inferred from these bids. High need achievement was associated with preference for the 9/10 probability of winning, high fear of failure with the 1/10 probability of winning. These findings are contrasted with earlier findings of preference for intermediate risks by high need achievement subjects and suggest that Atkinson's model of motivated risk taking is limited to skill situations.

12:30. Volunteering as arousal seeking. DANIEL S. P. SCHUBERT, *University of Chicago*. (Sponsor, Donald W. Fiske)

MMPI response and stimulant-use reports revealed that 562 college freshmen volunteers for "a psychological experiment" scored higher on the *Ma* and *Pd* scales and lower on the *Si* and *L* scales of the MMPI than 443 nonvolunteering freshmen. A higher proportion of volunteers than nonvolunteers reported drinking coffee and having taken a caffeine pill. From these differences, volunteering is suggested to be a component of the trait of arousal seeking. Further differences include volunteers scoring higher on the *F*, *Mf* (male), *Pa*, *Pt*, and *Sc* scales of the MMPI. The present results give further evidence of the non-representativeness of volunteers.

#### Division 8. Symposium: Mechanisms of Primary Socialization

12:00-1:50. Old Chicago Room, Sherman

J. P. SCOTT, *Roscoe B. Jackson Memorial Laboratory*, Chairman

##### Participants:

HARRY F. HARLOW, *University of Wisconsin*. Factors influencing social development in the rhesus monkey.

IRVEN DeVORE, *University of Chicago*. Socialization in free-living baboons.

JOHN L. FULLER, *Roscoe B. Jackson Memorial Laboratory*. Programed life histories and the socialization of the dog.

A. U. MOORE AND MRS. MOORE, *Cornell University*. Studies on the formation of the mother-neonate bond in sheep and goats.

#### Divisions 16 and 17. Symposium: Psychology for the School Counselor: Which Direction

12:00-1:50. Parlor B, Morrison

HERMAN J. PETERS, *Ohio State University*, Chairman

Participants: WARREN G. FINDLEY, *Atlanta Board of Education, Georgia*; KENNETH HOYT, *State University of Iowa*; HELEN G. STERN, *Nyack High School, New York*; JOHN BROEDEL, *Ohio State University*; AND HERMAN J. PETERS, *Ohio State University*.

#### Division 8. Contributed Papers II

1:00-1:50. Crystal Room, Sherman

JOSEPH ADELSON, *University of Michigan*, Chairman

1:00. Sex differences in social and marital factors among treatable alcoholics. ELIZABETH B. STEWART, JOSEPH P. KESLER, AND MORONI H. BROWN, *University of Utah College of Medicine*.

Female alcoholics are less often currently married, have more previous marriages, and more frequently choose to live as divorced than do alcoholic men. 90% have husbands who drink or are alcoholic, while only 18% of alcoholic men have wives who are alcoholics or drinkers. Although 60% of all alcoholics reported very active religious participation in childhood, women more often reported no activity at any time, while men fluctuated. In view of this and the marital pattern, it seems that the institutions of marriage and religion are less satisfying for alcoholic women than for alcoholic men.

1:10. Residential contact and attitudes toward Negroes. BERNARD M. KRAMER, *Massachusetts Mental Health Center*.

This is a study of attitudes toward Negroes of 619 respondents in five contiguous zones of Chicago which vary in distance from the Negro community and in the degree to which Negroes had moved into previously all white neighborhoods. Generalized uneasiness and concern over the actual or threatened presence of Negroes in the community was greatest where there had been most Negro residential movement. Specific anti-Negro prejudice, however, was least manifested where there was most and where there was least residential contact; where there was a medium amount of contact, anti-Negro prejudice was most manifested.

1:20. The effect of patient's relationships with peers and physicians on their psychiatric treatment programs. E. ROBERT SINNETT AND DANA B. HANFORD, *VA Hospital, Topeka, Kansas*.

Three classes of variables were examined for their relationships to patients' treatment programs: social relationships (defined sociometrically and by physician's ratings of liking for his patients), psychiatric judgments (diagnosis and prognosis), and socioeconomic indices (education and occupation). Both relatively socially isolated patients and those liked less by their physicians less frequently receive individual psychotherapy. Also, isolates are liked less by physicians. However, isolation is independent of the psychiatric classification variables. The social relationship variables are relatively independent of the psychiatric and socioeconomic variables. Also the social relationship variables are comparable to the socioeconomic and psychiatric variables in degree of association with receiving individual psychotherapy.

- 1:30. Social-psychological correlates of choice of college teaching as an occupation. W. CODY WILSON, *Harvard University*.

These data, from a questionnaire study of college seniors planning to enter college teaching as an occupation and a matched group of seniors planning to enter other occupations, support the hypothesis that choice among professional and managerial level occupations (when choice is not restricted by ability or economic and social conditions) is a function of: an idealized self-image (ego ideal), an evaluative judgment of how well the characteristics of an occupation match the requirements of the self-image, and the amount of social support expected for this judgment.

#### Divisions 9 and 12. Symposium: Communication in Mental Health

1:00-2:50. Louis XVI Room, Sherman

LOUIS D. COHEN, *Duke University*, Chairman.

##### Participants:

M. BREWSTER SMITH, *University of California, Berkeley*. What message do we want to communicate?

JUM NUNNALLY, *University of Illinois*. Communication of mental health concepts and its effects on changes in attitude and behavior.

NATHAN MACCOBY, *Stanford University*. Changing the attitudes and behavior of parents toward their children.

Discussant: LOUIS D. COHEN, *Duke University*.

#### Division 12. The Therapist as Independent Variable

1:00-2:50. The Assembly, Sherman

WILLIAM C. RHODES, *Peabody College*, Chairman

- 1:00. Attitudes of experienced psychologist-therapists. C. SCOTT MOSS, LYNN OURTH, CHARLES AUVENSHINE, AND PATRICIA SHALLENBERGER, *State Hospital No. 1, Fulton, Missouri, and University of Missouri*.

A detailed questionnaire was answered by a majority of the members of the American Academy of Psychotherapists. Membership qualifications insure a relatively high level of therapeutic experience. Information was obtained in four areas: early formulative influences, objective-subjective orientation, psy-

chotherapeutic practices, and activity preference. Results were analyzed in terms of factors such as "school," experience, professional degree, work setting, major professional activity, background influences, and research productivity. The subtle interaction of numerous variables was a major observation, suggestive of limitations of earlier, more superficial studies. Interesting comparisons were possible with results from previous studies, including APA Project B on significant contributors.

- 1:10. Therapists' judgments concerning patients considered for psychotherapy. SOL L. GARFIELD AND D. C. AFFLECK, *University of Nebraska College of Medicine*.

An attempt was made to assess therapists' ratings of selected patient variables in relation to prognosis for psychotherapy. In line with previous hypotheses, ratings of anxiety were positively correlated with prognostic ratings, whereas ratings of defensiveness were negatively correlated with prognosis. However, ratings of how positively the therapist felt toward the patient were most highly correlated with ratings of prognosis. In terms of assets for therapy, five categories accounted for most of the assets listed: intelligence, anxiety, motivation, age, and insight. There was less unanimity among the raters concerning problems to be encountered in therapy.

- 1:20. "Specificity" in therapeutic relationships of psychiatric aides. JASON ARONSON, STEVEN POLGAR, AND HARRY SILVERSTEIN, *Harvard Medical School and University of California School of Public Health*.

Psychiatric aides on a milieu therapy ward at Walter Reed Army Institute of Research were given extensive supervision in establishing and maintaining a therapeutic relationship with patients. A content analysis of the daily reports they wrote on each patient showed that aides, who were rated as more successful clinically by the senior staff, were consistently more "specific" in their reports of their relationships with patients than those rated as less successful. That is, they used significantly less generalization and inference in their reports on the patients ( $T = 3.52$ ;  $p > .01$ ), and they reported significantly more specific verbal material ( $T = 3.70$ ;  $p > .01$ ). This "specificity" appears to be inversely related to anxiety level since it increased for all aides as experience made them more comfortable in their role, and temporarily dropped with each change of the psychiatrist in charge (coefficient of concordance = .475;  $F = 3.62$ ;  $df 14,55$ ;  $p > .01$ ).



- 1:30. Effect of time limits: A comparison of client-centered and Adlerian psychotherapy. JOHN M. SHLIEN, HAROLD H. MOSAK, AND RUDOLPH DREIKURS, *University of Chicago and Alfred Adler Institute.*

Time-limited client-centered therapy has been effective and efficient on six of seven criteria. Results contained much promise, some contradiction. Replication was required. Adlerian psychotherapists repeated the experimental procedures with a sample of their patients, enabling an evaluative study of Adlerian psychotherapy, comparison with client-centered therapy, and substantiating unique effects of time limits. Distinctive, successful patterns of outcomes, measured by self-ideal correlations and counselor-client ratings, are maintained. For the third time, therapy cases significantly improve, with follow-up stability, still without reaching the level of "normal" controls. Surface results do not distinguish between the two therapies.

- 1:40. The influence of therapist character structure upon Rorschach changes in the course of psychotherapy. STANLEY R. GRAHAM, *Long Island Consultation Center, Forest Hills, New York.*

Five therapists whose personal  $M:C$  ratio was 2:1 or better in the direction of  $M$  were assigned 46 patients. Five therapists whose  $M:C$  ratio was 2:2 or better in the direction of  $C$  were assigned 43 patients. Both groups were given full Rorschach tests before treatment. There were no significant differences between the two groups in any major area of scoring. Upon retest after eight months of treatment, Group 1 showed statistically significant changes in the direction of  $M$ , while Group 2 demonstrated significant changes in the direction of  $C$ . Significant changes were observed in total response, Shading and Animal Movement responses.

- 1:50. The Strong Vocational Interest Blank as a measure of therapist differences. FREDERICK L. KLEIN, DOUGLAS M. MCNAIR, AND MAURICE LORR, *Veterans Administration, Washington, D. C.*

Some potentialities of the SVIB as a method of assessing therapist differences in psychotherapy research were studied. Specifically, SVIBs were obtained from 89 male psychotherapists, and comparisons were made to determine if the instrument differentiated among three professional disciplines—psychology, psychiatry, and social work—and between analyzed and unanalyzed therapists within each profession. Comparisons were made on 45 occupational

and three nonvocational scales, and on primary and reject patterns in seven factored occupational areas. Fifteen measures significantly differentiated among the professions. Social workers presented the most distinctive interest patterns, whereas psychiatrists and psychologists showed rather similar patterns. No significant differences were found between analyzed and unanalyzed therapists. Discussion relates results to previous findings and notes implications for use of the SVIB in psychotherapy research.

- 2:00. Multiple scaling of therapist verbal responses with a semantic differential. EDMUND S. HOWE AND BENJAMIN POPE, *University of Maryland School of Medicine.*

Ten bona fide therapist verbal responses having known positions on a one-dimensional scale of "Activity Level" were rated by 35 psychiatrists on 40 bipolar, adjectival scales representative of the following potential dimensions: Ambiguity, Lead, Inference, Stressfulness, Evaluation, Activity, and Potency. Correlations among scales were subjected to centroid analysis and quartimax rotation. The first factor was clearly Professional Evaluative (e.g., "Sensitive-Insensitive"); the second, Precision Potency (e.g., "Specific-General"). Implications and cautions are drawn concerning representativeness of the 10 responses, and the selection of scale "dimensions" for empirical work on the quantification of therapist verbal behavior.

## Division 12. Symposium: Some Current Developments in the Psychology of Suicide

1:00-2:50. Grand Ballroom, Sherman

EDWIN SHNEIDMAN, *VA Center, Los Angeles,*  
Chairman

### Participants:

ARTHUR KOBLE AND EZRA STOTLAND, *Ryther Child Center, Seattle, and University of Washington.* An "epidemic" of suicide in a "dying" hospital.

VIGGO JENSEN, *Receiving Hospital, Detroit.* Evaluation of the "rescue fantasy" in suicide.

RAYMOND ANDERSON, *Suicide Prevention Center, Los Angeles.* The psychologist in a suicide prevention center.

CHARLES NEURINGER, *University of Kansas.* A semantic differential study of suicidal thought.

EDWIN SHNEIDMAN, *VA Center, Los Angeles.* Necropsychology and the coroner's office.

### Division 16. Symposium: Neurological Deficits in Children: Diagnosis and Treatment

1:00-2:50. Terrace Casino, Morrison

CLEON TRUITT, *Chicago Bureau of Child Study*,  
Chairman

Participants: RAY BARSCH, *Jewish Vocational Service, Milwaukee, Wisconsin*; MEYER A. PERLSTEIN, *Northwestern Medical School*; AND MARK TUCKER, *Southwestern University*.

### Division 16. Symposium: Promising Practices in Screening Emotionally Disturbed Children

1:00-2:50. Constitution Room, Morrison

NADINE M. LAMBERT, *California State Department of Education*, Chairman

Participants: KENNETH DAVIDSON, *Yale University*; ALVIN J. SIMMONS, *Human Relations Service of Wellesley*; ELIZABETH BROWN, *Illinois State Normal University*; ELIZABETH M. KOPPITZ, *Child Mental Health Center, Columbus, Ohio*; ELI M. BOWER, *California State Department of Education*; AND JOSEPH B. MARGOLIN, *National Institute of Mental Health*.

### Divisions 16 and 22. Symposium: Disabled Children and Youth

1:00-2:50. Bal Tabarin, Sherman

FRANCES A. MULLEN, *Chicago Board of Education*,  
Chairman

Participants: JEROME COHEN, *Northwestern University*; THEODORE WOHL, *Convalescent Hospital for Children, Cincinnati, Ohio*; WILLIAM GELLMAN, *Jewish Vocational Service, Chicago*; WILLIAM KIR-STIMON, *Rehabilitation Institute of Chicago*; AND LEONARD PEARSON, *Rest Haven Rehabilitation Hospital, Chicago*.

### Division 20. Research Papers

1:00-1:50. Walnut Room, Morrison

MARION BUNCH, *Washington University*, Chairman

1:00. Repeated testing of aged subjects: Problems and potentials. DAVID G. McDONALD, *Washington University School of Medicine*.

Twelve patients in a hospital for indigent aged were given estrogen, estrogen-androgen, and androgen, each for one month with one-month rest periods

between treatments. During this five-month period, all patients were given a short psychological test battery twice weekly, plus a standardized interview once weekly. Emphasis is placed on a discussion of the problems encountered in repeated testing of aged subjects and of the potential uses of this methodology.

1:10. Some problems in drug research with the hospitalized aged. JEROME D. PAUKER, *Malcolm Bliss Mental Health Center, St. Louis, Missouri*.

Four groups of aged, nonpsychiatric, hospitalized patients, equated on the basis of various psychological, medical, and social data, were administered full, half, and quarter dosage of an androgen-estrogen preparation, and placebo, respectively. They were re-evaluated at the end of three and five months of hormone administration. Statistical analysis revealed no significant post-treatment differences in psychological data, though the evaluating physician reported favorable changes in mood, sense of well-being, and activity. Discussion centers on such problems as high attrition, use of standard dosage levels, general damping effect of many hospital environments, separation of research and clinical staffs.

1:20. Reduction of intraindividual variance in CFF thresholds. RAYFORD T. SAUCER AND NEIL W. COPPINGER, *VA Center, Kecoughtan, Virginia*.

When subjects are presented a CFF stimulus consisting of a series of pulses differing in length by 10%, there is a significant reduction of intraindividual variance. Mean CFF thresholds for individuals so obtained correlate highly with their conventional CFF thresholds and have a retest reliability approximately equal to conventional CFF thresholds. The within-group variance is not significantly changed. When the mean threshold differences under the two different conditions are corrected for correlation, the mean of the 10% condition is slightly lower, although the difference is highly significant. Results are discussed in terms of psychophysics and of possible neural processes.

1:30. A behavioral scale for biological age. WARD C. HALSTEAD AND PAT MERRYMAN, *University of Chicago*.

In various studies, the Impairment Index based upon the Halstead Battery of Neuropsychological Tests has proved to be valid, reliable, and relatively sensitive in reflecting the state of higher brain functioning in man. These same scales appear to be relevant to normal populations. For example, in one study performance on these tests has been found to

correlate highly (.82) with top-management appraisal of the effectiveness of executives. Performance on certain subtests of this battery has been found to be uncorrelated with chronological age. A combination score from five of these subtests has been established which gives a more satisfactory age-free over-all score for the battery than the Impairment Index.

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**APA Board of Professional Affairs and APA Committee on Mental Health Research and Programs. Workshop: State Mental Health Problems and Programs**

2:00-3:50. Embassy Room, Morrison

ARTHUR J. BINDMAN, *Massachusetts Department of Mental Health*, Chairman

Participants: NICHOLAS HOBBS, *Peabody College*; GODFREY HOCHBAUM, *United States Public Health Service*; HOWARD E. MITCHELL, *Philadelphia Child Guidance Clinic*; AND JOSEPH M. BOBBITT, *National Institute of Mental Health*.

**Division 8. Group Differences in Attitudes and Values**

2:00-2:50. Jade Room, Sherman

ROBERT CHIN, *Boston University*, Chairman

2:00. Attitudes toward the mentally ill of psychiatric hospital personnel as a function of occupation, education, sex, and age. JACOB COHEN AND E. L. STRUENING, *New York University and VA Hospital, Montrose, New York*.

The relationships of occupation, education, age, and sex with the five attitude factor scores yielded by the Opinions about Mental Illness Scale (OMI) were determined by analysis of variance separately for personnel in two large geographically widely separated VA neuropsychiatric hospitals ( $N = 653$  and  $541$ ). The attitude dimensions Authoritarianism, Unsophisticated Benevolence, Mental Hygiene Ideology, Social Restrictiveness, and Interpersonal Etiology were sharply discriminated among the ten occupational groups. Educational level was complexly related to all but Social Restrictiveness. Age is U-shape related with Authoritarianism and positively with Social Restrictiveness. Women show higher scores on both Unsophisticated Benevolence and Social Restrictiveness.

2:10. Some differential effects of race of rater and ratee on early peer ratings of combat aptitude. HARRY KAPLAN AND JOHN E. DE JUNG, *Personnel Research Branch, Department of the Army*.

Peer combat aptitude ratings made in the fifth week of basic training were examined utilizing analysis of covariance designs with Caucasian and Negro ratee samples statistically matched on Infantry aptitude test scores. Though all rater groups gave higher ratings to men of their own race, mean differences were significant only for Negro rater samples. In examining the two sets of ratings received by the same man from his Caucasian and Negro peers, significant differences were found for both Caucasian and Negro ratee samples. Again, differences were substantially greater for Negro ratee samples. Results are discussed in terms of adequacy of design and effect on intrasquad ratings.

2:20. Some sociocultural differences in attitudes and values. IRVIN J. LEHMANN, *Michigan State University*.

While much research has dealt with the F scale and the Study of Values, the study of attitudes of stereotypy and dogmatism and values other than those measured by the AVL has escaped intensive investigation. This study is concerned with the attitudes and values of different religious and sociocultural groups. It was hypothesized that there would be marked differences between the sexes and among students of different religious and sociocultural backgrounds. Data were gathered on 2,746 students entering Michigan State University in the fall of 1958. The results support many of the hypotheses.

2:30. Values and "outlook" of Negro and white youth in a border state community. BERNICE EISMAN LOTT AND ALBERT J. LOTT, *Kentucky State College and University of Kentucky*.

This study compares Negro and white seniors, from four high schools, in terms of values and future goals. The results obtained indicate a general similarity between the two groups in measured values, and a "reality-oriented" approach to the future on the part of the Negro students, illustrated by: greater desire to leave the south; more dominant interest in middle-status occupations and vocational training; and by the finding that, when Negroes and whites, matched for IQ and parental occupation, are compared, differences between them in vocational goals and postgraduate plans disappear. These findings are in contrast to those of earlier investigations which have reported "skewed" and unrealistic aspirations among Negro youth.

**Division 8. Discussion Group: Group Theory and Concepts**

2:00-3:50. Old Chicago Room, Sherman

LUIGI PETRULLO, *Office of Naval Research*,  
Chairman

Participants: KENNETH BERRIEN, *Rutgers University*; RAYMOND B. CATTELL, *University of Illinois*; MORTON DEUTSCH, *Bell Telephone Laboratories*; HAROLD GUETZKOW, *Northwestern University*; JOHN K. HEMPHILL, *Educational Testing Service*; JOHN KENNEDY, *Princeton University*; OMAR K. MOORE, *Yale University*; THORNTON B. ROBY, *Tufts University*; HAROLD M. SCHRODER, *Princeton University*; AND ROBERT B. ZAJONC, *University of Michigan*.

**Divisions 8 and 9. Symposium: College and Family: Harmony and Opposition**

2:00-3:50. Crystal Room, Sherman

CAROL KAYE, *Wayne State University*, Chairman**Participants:**

BLANCHE GEER, MARSH RAY, AND HOWARD S. BECKER, *Community Studies, Inc.* Family and campus.  
CHARLES BIDWELL, *Harvard University*. College careers and family ties: Some preliminary observations at Harvard.  
HAROLD WEBSTER, *University of California, Berkeley*. Value contrasts between home and college at four institutions.  
MARGUERITE A. SMITH, *University of Michigan*. Personality and role conflict in college women.  
Discussant: ROSE K. GOLDSSEN, *Cornell University*.

**Division 12. Film: The Experimental Induction of Anxiety through Hypnosis**

2:00-2:50. Ruby Room, Sherman

EUGENE E. LEVITT, *Indiana University Medical Center*, Chairman

Psychologists wishing to attend should write to: Eugene E. Levitt; Department of Psychiatry, Indiana University Medical Center; Indianapolis 7, Indiana.

**Division 16. Symposium: Important Background Factors Influencing Clinical Evaluations of School Children**

2:00-3:50. Grand Ballroom, Morrison

PENELOPE P. POLLACZEK, *Mt. Vernon Board of Education, New York*, Chairman**Participants:**

NANCY BAYLEY, *National Institute of Mental Health*. Developmental factors influencing behavior.  
PAUL SCOTT, *Roscoe B. Jackson Memorial Laboratory, Maine*. Genetics of behavior.  
BERNICE NEUGARTEN, *University of Chicago*. Social class differences and cultural influences on behavior.  
MARY ALICE WHITE, *New York Hospital-Westchester Division*. Overview and summary of background factors as pertaining to the school psychologist.

**Divisions 16 and 18. Symposium: Problems of Mental Health Consultation in the Schools**

2:00-3:50. Venetian Room, Morrison

JERRY W. CARTER, *National Institute of Mental Health*, Chairman**Participants:**

ALVIN SIMMONS, *Human Relations Service of Wellesley*. Consultation through a mental health agency.  
KATHERINE D'EVELYN, *Greatneck School System*. Consultation within the school system.  
WILLIAM C. RHODES, *George Peabody College for Teachers*. Training in community mental health consultation.  
BOYD McCANDLESS, *State University of Iowa*. Consultation as a part of training programs for school psychologists.

**Division 17. Symposium: Concerns and Directions in Counseling Psychology**

2:00-3:50. Parlor B, Morrison

MITCHELL DREESE, *George Washington University*, Chairman**Participants:**

ALBERT S. THOMPSON, *Teachers College, Columbia University*. Problems of counseling research.  
CLAUDE GRANT, *New York University*. Concerns of service and training among counseling psychologists.  
ROBERT A. HARPER, *Washington, D. C.* Professional status and relationships of counseling psychologists.

**Division 20. Symposium: Psychophysiological Factors in Senescent Behavior**

2:00-3:50. Walnut Room, Morrison

WALTER D. OBRIST, *Duke University*, Chairman



## Participants:

ALFRED D. WEISS, *Massachusetts General Hospital*. The psychophysiology of sensory functions in senescence.

WALTER W. SURWILLO, *National Heart Institute*. Central nervous system factors in simple reaction time.

RAYFORD T. SAUCER AND NEIL W. COPPINGER, *VA Center, Kecoughtan, Virginia*. Psychophysiological measurements as indices of functional efficiency.

BARRY M. SHMAVONIAN, *Duke University*. Age differences in autonomic reactivity.

perceived competence significantly more than the reverse. The difference was significant considerably beyond the .01 level.

3:20. Behavioral, attitudinal, and perceptual differences between leaders and nonleaders in situations of group support and nonsupport. CHARLES G. MCCLINTOCK AND PHILIP S. GALLO, *University of California, Santa Barbara, and University of California, Los Angeles*.

Two group situations, support and nonsupport, were created by three paid participants for naive subjects who differed in previous leadership experience. Assuming that "leadership ability" is a complex set of learned responses, the subjects' verbal behavior, perceptions, and attitudes to the two situations were assessed. Results indicate that individuals with previous leadership experience differ from those without in certain predicted ways. Leaders were found more perceptive of nonsupport, more task oriented particularly under nonsupport, and more expressive of negative affect under nonsupport. Predicted differences within leaders' behavior between support and nonsupport situations were also observed.

3:30. Information exchange in large group functioning. MARJORIE N. DONALD, *Vanderbilt University*.

The frequency of transmission and reception of relevant information was studied in 104 local units of a large, voluntary organization. The frequency of exchange within and across status levels varied significantly with member status, size of group, and perceived channels for communication. Information exchange was also significantly related to member loyalty to the group, but not unequivocally when controls were placed on group size. Differing patterns of relationships characterized groups of different sizes. There is evidence suggesting that experience in organizational roles may be a contributing factor.

## Division 8. Group Processes II

3:00-3:50. Jade Room, Sherman

JOHN R. P. FRENCH, *University of Michigan*,  
Chairman

3:00. Group proficiency, dependency on supervisors, and morale. MYRON WOOLMAN, *Human Resources Research Office*.

To obtain estimates of the effects of morale and supervisory dependency measures on battery operator proficiency. Operators in 24 Nike batteries in the United States. Twelve batteries received "military inspections," and 12 did not. Six measures were available: four evaluations of operator proficiency, one supervisory dependency measure, and one morale measure. Cross-correlations of mean battery scores were made for (a) total batteries, (b) inspected, and (c) noninspected batteries. Proficiency was not related to morale but was negatively correlated with supervisory dependency for the total sample; in the subgroups the relationships between variables differed markedly.

3:10. Asymmetry of social influence as a function of perceived differences in task competence. MELVYN D. CRONER AND RICHARD H. WILLIS, *Carnegie Institute of Technology*.

Asymmetry of influence in dyads was investigated as a function of perceived task competence and task similarity. Subjects, 54 undergraduates, were run in like-sexed pairs. A preliminary task, in which perceptions of differential task competence were induced, was followed by the main task of independently judging 100 stimuli aloud. With Group I, the preliminary task was relatively dissimilar to the main task; whereas with Group II, the two tasks were highly similar. For Group II only, the subject of high perceived competence influenced the subject of low

## Division 12. Brain Functioning

3:00-4:50. The Assembly, Sherman

HERDIS L. DEABLER, *VA Center, Gulfport*, Chairman

3:00. Perception of incongruities among brain damaged, clinically depressed, and "other" patients. PAUL G. DASTON AND ISAAC BEHAR, *VA Hospital, Durham, North Carolina, and Duke University*.

The photograph of a three-sided building, taken so as to appear two-dimensional, was shown to 74 patients: 21 brain damaged, 21 clinically depressed, and 32 "others." A reliable structured interview fixed

the degree of spontaneity in identification of the incongruity plus its explanation. As predicted, overall differences among groups were significant (.01). Brain damaged subjects showed greatest impairment in ability to discriminate salient cues in identifying the incongruity. Depressives also showed some impairment. Correlations with age and tested intelligence are discussed in relation to perceptual organization.

- 3:10. Differential diagnosis of brain damage by a modification of the Continuous Performance Test. JEROME D. SCHEIN, *Florida State University*.

The Continuous Performance Test (CPT) was designed to test the hypothesis that reduction of the ability to maintain attention is a consequence of brain damage. To test this hypothesis, a modification of the CPT was administered to 127 consecutive neuropsychiatric admissions. CPT scores differentiated brain damaged from neurotic and normal patients, and psychotic from neurotic and normal patients. Brain damaged patients with diffuse EEGs differed from those having normal and focal tracings. The results indicate the CPT is a useful measure of attentivity, but that this characteristic is not an exclusive consequence of brain damage.

- 3:20. Verbal and perceptual performance in patients with lateralized cerebral lesions. LOUIS D. COSTA and HERBERT G. VAUGHAN, *Albert Einstein College of Medicine*.

Thirty-six patients with lateralizable brain damage were compared with each other and with 18 normal controls, using perceptual-motor and verbal tasks of a level of difficulty low enough for severely incapacitated subjects to participate. Patients with left-sided lesions had a deficit in Mill-Hill Vocabulary performance. Both right- and left-sided lesion patients did worse than controls on a variety of perceptual-motor tasks. Furthermore, patients with right-sided lesions performed significantly worse than those with left-sided lesions on the WAIS block designs, supporting the assumption that "constructional apraxia" is associated with lesions of the nondominant (right) hemisphere. Significance for clinical prediction is discussed.

- 3:30. Behavior changes in schizophrenic subjects following psychosurgery (topectomy) as determined by a time-sampling study. THEODORE F. GRANT, JR. and ELAINE F. KINDER, *Rockland State Hospital, Orangeburg, New York*.

Frequency of manipulation and/or attention to objects was studied as a relevant variable of time-

sampling records of behavior of 20 schizophrenic brain operated and control subjects in a standard situation. Comparisons of data from records taken in 1948, 1949 with those of 1959, 1960 (ten subjects had superior topectomy in 1949) showed that frequency of the behavior studied increased significantly for both groups over the ten-year interval. Analysis of data by Joseph Lev, using difference between slopes of the regression lines for the two groups, shows a significant difference (.01) in environment-related behavior.

- 3:40. Normal electrocortical activity in relation to personality factors. EDWARD J. KELTY, *Roosevelt VA Hospital*.

It was proposed that individual differences in electrocortical activity among subjects with normally functioning central nervous systems are related to personality patterns. Electroencephalograms were recorded under resting, attention, and simple visual stimulation conditions. Various tests were given to measure "behavioral alertness" and "behavioral expressiveness," as derived from the work of Welsh, Eysenck, and others. The principal finding was the objective demonstration of a relationship between a personality factor and alpha activity. Welsh A scores (MMPI), as a measure of "alertness," significantly correlated with alpha index. Objective evidence of the second personality factor as a relevant variable was not obtained.

- 3:50. The relation of electroencephalographic slowing to the impairment of intellectual functions. C. DAVID JENKINS and ALLAN W. DOWNIE, *University of North Carolina*.

It was hypothesized that a certain speed of electrical activity in the brain, as recorded by the EEG, is associated with optimal intellectual functioning and, conversely, that slowing of brain potentials is accompanied by mental impairment. A reliable scale for rating EEG records clinically for amount of slowing was developed. By it, 57 adult hospital patients were divided into four EEG categories, comparable in age, education, and occupational prestige. Two-way analyses of variance showed clearly significant association between EEG slowing and lowered scores on most visuomotor tasks, but no such association with verbal tests.

- 4:00 Psychophysical measurement of rate of change of perceived size in the spiral aftereffect. THOMAS R. SCOTT and RUFUS R. MEDLIN, *VA Hospital, Columbia, South Carolina*.

Claims that the spiral aftereffect measures brain damage demand a quantitative analysis of the effect.

Rate of change of perceived size is measured by alternate presentation of the rotating spiral and a changing stimulus in a mirror tachistoscope. The changing stimulus is produced electronically in the form of a circle which can be made to expand or contract at any desired rate. Using the method of limits, 2,000 observations on four normal subjects show a monotonic increasing relationship between the speed of rotation of the spiral and the rate of change of perceived size, within the range of parameters used.

4:10. Perceptual and conceptual processes in a case of left-sided hemispatial blindness. MAX APPELDORF, *VA Center, Martinsburg, West Virginia*.

A 60-year-old artist suffering from left-sided hemispatial blindness or left-sided inattention was studied intensively with a variety of techniques. Analysis of the drawings suggested that inattention may occur not only in the gross left visual space but further as a neglect of left subunits in either the left or right visual space. Left-sided inattention did not always occur. The patient used the left visual space where possible but in a direct perceptual way. Tasks that were complex and that required conceptualization were most conducive to asymmetrical inattention.

#### Division 12. Symposium: Current Developments in Hypnosis

3:00-4:50. Grand Ballroom, Sherman

PAUL C. YOUNG, *Louisiana State University*,  
Chairman

Participants: J. W. GEBHARD, *Johns Hopkins University*; MILTON H. ERICKSON, *Phoenix, Arizona*; MARTIN T. ORNE, *Harvard University*; AND MILTON V. KLINE, *Long Island University*.

Discussant: JOHN G. WATKINS, *VA Hospital, Portland, Oregon*.

#### Division 12. Symposium: The Outlook for Psychotherapy Research

3:00-4:50. Louis XVI Room, Sherman

HERBERT K. STONE, *Atlanta Psychiatric Clinic*,  
Chairman

Participants:

HERBERT K. STONE, *Atlanta Psychiatric Clinic*. The psychologist as a psychotherapy researcher.

TIMOTHY LEARY, *Harvard University*. Diagnosis and treatment of psychotherapy research.

HANS H. STRUPP, *University of North Carolina*. Some comments on the future of psychotherapy research.

RALPH H. GUNDLACH, *Postgraduate Center for Psychotherapy*. The problems of psychotherapy research in an interdisciplinary setting and in private practice.

MORRIS B. PARLOFF, *National Institute of Mental Health*. Psychotherapy research with families.

#### Division 16 Committee on the Intellectually Gifted. Open Meeting

3:00-3:50. Cotillion Room, Morrison

HARRIET O'SHEA, *Purdue University*, Chairman

#### Division 16 Subcommittee on Stimulating Research on the Gifted. Open Meeting

4:00-4:50. Cotillion Room, Morrison

EDNA R. OSWALT, *Westminster College*, Chairman

#### Division 17 Committee on Divisional Functions. Group Discussion: The Professional Functions of the Division of Counseling Psychology

4:00-5:50. Parlor B, Morrison

WILLIAM L. KELL, *Michigan State University*,  
Chairman

Brief presentation of topics of current concern to the Division of Counseling Psychology with discussion by divisional members present.

#### APA. Conversation-Contact Hour

5:00-5:50. Promenade Room, Morrison

GERALD C. CARTER, *University of Illinois*, Leader

5:00-5:50. Burgundy Room, Morrison

JOHN E. ANDERSON, *University of Minnesota*, Leader

#### Division 16. Group Meeting: Problems Encountered by School Psychologists in Systems with 20,000 Enrollment and Less

5:00-5:50. Parlor F, Morrison

GEORGE M. KAISER, *Glencoe Public Schools, Illinois*,  
Chairman

**Division 16. Group Meeting: Problems Encountered by School Psychologists in Systems with 20,000-75,000 Student Enrollment**

5:00-5:50. Parlor D, Morrison

VERA MILLER, *Evanston Community Consolidated Public Schools*, Chairman

**Division 16. Group Meeting: Problems Encountered by School Psychologists in Systems with 75,000 Enrollment and Larger**

5:00-5:50. Parlor C, Morrison

WILLIAM M. CANNING, *Chicago Public Schools*, Chairman

**FRIDAY EVENING, SEPTEMBER 2**

**APA. Conversation-Contact Hour**

6:00-6:50. Promenade Room, Morrison  
OTTO KLINEBERG, *Columbia University*, Leader

6:00-6:50. Burgundy Room, Morrison  
HAROLD M. HILDRETH, *National Institute of Mental Health*, Leader

6:00-6:50. Parlor C, Morrison  
ROBERT W. KLEEMEIER, *Washington University, St. Louis*, Leader

6:00-6:50. Parlor D, Morrison  
FILLMORE H. SANFORD, *University of Texas*, Leader

6:00-6:50. Parlor B, Morrison  
ALBERT P. MASLOW, *United States Civil Service Commission*, Leader

**APA. Symposium: Psychology and Problems of Policy in a Nuclear Age**

8:00-9:50. Terrace Casino, Morrison

ROGER RUSSELL, *Indiana University*, Chairman

**Participants:**

THOMAS MILBURN, *Michelson Laboratory, US-NOTS*. Some logical and psychological considerations for any effective policy of deterrence.

JEROME FRANK, *Johns Hopkins University*. The motivational and emotional aspects of the disarmament problem.

CHARLES OSGOOD, *University of Illinois*. The cognitive aspects of the present dilemma and certain requirements for its solution.

DANIEL KATZ, *University of Michigan*. Ongoing and needed psychological research in the area of international relations.

ROGER RUSSELL, *Indiana University*. The role of psychologists as social scientists and of psychology as a profession in the formulation and evaluation of policy.

**SATURDAY MORNING, SEPTEMBER 3**

**APA Board of Professional Affairs and American Board for Psychological Services. Workshop: The Preparation of State Directories**

9:00-4:50. Parlor G, Morrison

KARL HEISER, *American Board for Psychological Services*, Chairman

Participants: C. GILBERT WRENN, *University of Minnesota*; E. LOWELL KELLY, *University of Michigan*; ROY BRENER, *VA Hospital, Hines, Illinois*; AND GEORGE S. SPEER, *Illinois Institute of Technology*.

**Division 2. Symposium: New Educational Media: Current Developments**

9:00-10:50. Parlor D, Morrison

R. I. EVANS, *University of Houston*, Chairman

**Participants:**

C. R. CARPENTER, *Pennsylvania State University*. Media systems and academic course learning.

R. I. EVANS, *University of Houston*. An investigation of the utilization of the video tape recorder in an improvement of teaching program: Tentative findings.

J. GROSSLIGHT, *Pennsylvania State University*. Methods of teaching revisited: The face-to-face problems.

A. A. LUMSDAINE, *University of California, Los Angeles*. Teaching machines and programmed individual instruction.

F. MCKINNEY, *University of Missouri*. Can TV instruction add qualitatively to a course in psychology?

L. SIEGEL, *Miami University*. Closed-circuit television in the framework of the new instructional media.

Discussant: MARK A. MAY, *Yale University*.



**Division 2 and American Catholic Psychological Association. Symposium: Problems in the Teaching of Scientific Psychology in the Denominational College**

9:00-10:50. Cotillion Room, Morrison

T. J. GANNON, *Loras College*, Chairman

**Participants:**

B. M. LEVINSON, *Yeshiva University*. Psychology: Its practice and teaching in a Jewish college.

J. M. VAYINGER, *Garrett Biblical Institute*. The teaching of psychological science in the Protestant college.

L. A. WAUCK, *DePaul University*. The status of psychology in Catholic colleges and universities in the United States.

Discussant: W. J. McKEACHIE, *University of Michigan*.

**Division 9. Discussion Group: The Psychological Assumptions Involved in National Defense Policy: A Discussion of Their Appropriateness**

9:00-10:50. Grand Ballroom, Sherman

MORTON DEUTSCH, *Bell Telephone Laboratories*, Chairman

Resource Persons: CHARLES OSGOOD, *University of Illinois*; ROGER RUSSELL, *Indiana University*; AND THOMAS MILBURN, *China Lake Naval Ordnance Test Station*.

**Division 12. Symposium: Progress Report on Clinical Applications of Free-Operant Conditioning Techniques**

9:00-11:50. The Assembly, Sherman

OGDEN R. LINDSLEY, *Harvard Medical School*, Chairman

**A. Therapeutic Techniques (shaping of normal responses)**

DONALD W. SHEARN, *Indiana University*. Excessive speech.

JOHN PAUL BRADY, *Indiana University Medical Center*. Hysterical blindness.

ISRAEL GOLDBAMOND, *Southern Illinois University*. Stuttering.

MARIAN DEMYER AND CHARLES B. FERSTER, *Larue Carter Memorial Hospital and Indiana University Medical Center*. Autism in children.

TED AYLLON, *Saskatchewan Hospital*. Chronic psychotic symptoms.

**B. Interviewing Techniques (analysis and shaping of verbal behavior)**

STEPHANIE PISONI AND KURT SALZINGER, *New York State Department of Mental Hygiene and Columbia University*. Interviews with schizophrenics.

CHARLES W. SLACK, *Harvard University*. Psychotherapy with juvenile delinquents.

**C. Evaluative Techniques (experimental analysis of hospitalizing behavior)**

NORMAN R. ELLIS, *State Colony and Training School, Pineville, Louisiana*. Mental retardation.

DONALD H. BULLOCK AND MANLY Y. BRUNT, *Institute of the Pennsylvania Hospital, Philadelphia*. Acute psychosis.

OGDEN R. LINDSLEY, *Harvard Medical School*. Chronic psychosis.

**Division 15. Teaching Machines**

9:00-9:50. Promenade Room, Morrison

WARREN G. FINDLEY, *Board of Education, Atlanta Public Schools*, Chairman

9:00. A feasibility study of a special machine-taught oral-aural Russian language course. E. H. ROCKLYN AND R. I. MOREN, *Human Resources Research Office*.

Popularity of commercial, machine-taught, "do-it-yourself" foreign language courses is widespread. The effectiveness of such courses, especially in teaching speaking and understanding is not usually evaluated. A special machine-taught course in speaking and understanding Russian was constructed to answer such questions as: Can basic skills in speaking and understanding foreign languages be programed and machine taught? Can students learn to pronounce Russian adequately without human (live) instruction or assistance? Can course material be programed to produce and sustain student motivation? Administration and evaluation of this course supports the feasibility of machine-teaching foreign languages.

9:10. The influence of repetition of incorrectly answered items in a teaching machine program. JAMES G. HOLLAND AND DOUGLAS PORTER, *Harvard University*.

The increasing use of teaching machine techniques which fail to require the subject to repeat erroneously answered items prompted this investigation into the usefulness of reviewing errors in a teaching program carefully designed to keep errors minimal. A comparison of matched review and nonreview groups revealed that, even in such a "minimal error" program, repetition of missed items significantly im-

proved comprehension; although time to repeat incorrectly answered items increased the total time required to complete the machine course. The implications for program and machine design are discussed.

9:20. The development and use of a "standard" program for investigating programmed verbal learning. J. L. EVANS, ROBERT GLASER, AND LLOYD E. HOMME, *University of Pittsburgh*.

A symbolic logic program was developed to be used as a standard learning "apparatus" for investigating programmed learning. Immediate and retention effects of variations in response mode and method of program construction were assessed with three types of criterion measures. Results indicate: experimental treatments significantly affected learning time and time spent on criterion measures; criterion performance in terms of errors was not significantly affected by mode of response, including making no overt response to program items; differential retention effects were observed as a function of type of performance measured; a systematically developed program produced criterion behavior comparable to that of a less systematic program.

9:30. Some economic realities of teaching-machine instruction. DAVID J. KLAUS AND ARTHUR A. LUMSDAINE, *American Institute for Research, Pittsburgh, Pennsylvania*.

The anticipated wide-scale use of self-instructional materials raises important and interesting economic questions. The estimated cost of developing a program for a year-long high school course may well run to many thousands of dollars. However, this cost does not appear unreasonable when prorated over several years of use by a number of school systems. The most economical way of presenting programs individually to students is on film viewed with a simple hand-operated device. Presentation of programs by means of books or paper tape, however, may place the cost out of reach of most school budgets.

#### **Division 15. Symposium: Application of Reinforcement Psychology to Classroom Processes**

9:00-10:50. Hollywood Room, Morrison

WILLIAM CLARK TROW, *University of Michigan*,  
Chairman

##### **Participants:**

EVAN R. KEISLAR, *University of California, Los Angeles*. Reinforcement and motivation.

EDGAR A. SMITH, *Devereux Foundation*. Reinforcement operations in teaching exceptional children.

EUGENE E. HADDAN, *North Texas State College*. Reinforcement in the college classroom.

FINLEY CARPENTER, *University of Michigan*. Reinforcement and the management of classroom learning media.

#### **Division 15. Symposium: Creative Thinking and School Achievement**

9:00-10:50. Burgundy Room, Morrison

WILLIAM B. MICHAEL, *University of Southern California*, Chairman

##### **Participants:**

ESIN KAYA, *New York University*. The thinking process and subject content.

PHILIP R. MERRIFIELD, *University of Southern California*. Framework for curriculum evaluation.

CHARLES E. MEYERS, *University of Southern California*. The role of educational measures in stimulating or discouraging attention to creative thinking in the curriculum.

ELNORA SCHMADEL, *University of Southern California*. Creative thinking abilities and school achievement.

MARCELLA R. BONSALE, *Division of Research and Guidance, Los Angeles County Schools*. Current school programs for developing creativity.

Discussant: J. P. GUILFORD, *University of Southern California*.

#### **Division 17. Contributed Papers II**

9:00-9:50. Room 427, Morrison

LEWIS E. DRAKE, *University of Wisconsin*,  
Chairman

9:00. The relation of acceptance of limitations to college achievement. EMANUEL M. BERGER, *University of Minnesota*.

A relationship was observed between certain theoretical propositions concerning self-acceptance and a set of attitudes that appeared to be common to high ability underachievers in college. This set of attitudes was used to construct a 16-item scale tentatively called "acceptance of limitations." The intent of the scale was to measure the willingness to make one's best efforts despite the limitations that might appear consequently. The hypotheses that "acceptance of limitations" is related to college achievement and, secondly, that it is more highly related to the achievement of high ability men are in general supported by the results.

- 9:10. An analysis of the California Psychological Inventory and the American Council on Education Psychological Test as predictors of success in different college curricula. MARTHA J. MAXWELL, *University of Maryland*.

CPI and ACE scores obtained at college entrance were analyzed for a sample of 400 male University of Maryland students, equally divided between graduates and drop-outs from four college groups. Using a two-way analysis of variance design, the following differences were tested: graduation vs. nongraduation, college, and graduation vs. nongraduation from different colleges. Seven CPI scales (Ai, Ac, To, So, Re, Py, and Fe) significantly differentiated graduates and drop-outs, two (Cs and Fe) differentiated colleges, and two (Ie and Do) differentiated graduation from different colleges. ACE scores are compared with the personality scales and implications for counseling discussed.

- 9:20. The prediction of college grades from personality, achievement, and aptitude variables. JOHN L. HOLLAND, *National Merit Scholarship Corporation*.

This study was designed primarily to explore the usefulness of nonintellectual factors in predicting college grades and to provide information for the development of a theory of academic achievement. The present study tested the validity of the Sixteen Personality Factor Questionnaire, the National Merit Student Survey (an achievement inventory constructed from a review of the literature), and the Vocational Preference Inventory for predicting the freshman year grades of a sample of high aptitude students attending 277 colleges. Validity was determined for students attending all colleges, groups of colleges characterized by different atmospheres and talent supplies, and individual colleges.

- 9:30. Some college scholastic progress patterns. F. CHANDLER YOUNG, *University of Wisconsin*.

A description of the scholastic progress of a former group of undergraduates can be used effectively in forecasting the scholastic progress for students currently enrolled. Understanding the significance of college scholastic progress already made by an individual will enable the counselor to make valid forecasts regarding the college progress he is most likely to make subsequently. This exploratory study of 259 former students, grouped according to scholastic ability and first semester achievement, showed that each of the nine groups progressed differently in terms of both grade point averages earned and number of semesters in college without interruption.

## Division 8. Anxiety and Threat II

- 10:00-10:50. Jade Room, Sherman

FRANK AULD, JR., *Wayne State University*,  
Chairman

- 10:00. Comparison of four anxiety indices derived from the MMPI. JOHN S. CAYLOR AND ALBERT B. VALLE, *University of California, Riverside*.

The MMPI was administered twice to 48 college freshmen in the seventh and fifteenth weeks of the semester. For each of the four anxiety indices derived therefrom (Taylor, MAS, Welch Factor A, Winne Scale, and *Pt*) temporal stability was high, as were the relationships between all scales at each testing, while all means decreased significantly. No relationship was found at either testing between the anxiety scales and such tasks as Digit Symbol Substitution, water bottle problems, hidden word, or word listing. An empirical scale of 146 nonduplicating MMPI items, selected on the basis of TMS performance, yielded relationships from .70 to .90 with that criterion on cross-validation with college and prison samples.

- 10:10. Effectiveness of the anxiety differential in an examination situation. SHELDON ALEXANDER AND T. R. HUSEK, *University of Illinois and University of California, Los Angeles*.

Previous studies by the authors investigated the reliability and validity of the Anxiety Differential as a measure of bodily-harm anxiety. The present study examined the scores of subjects in a pre-examination situation. The pre-examination subjects scored significantly higher on the Anxiety Differential scales than did a comparable control group in a nonexamination situation. The anxiety scales also yielded adequate reliability coefficients. The results provide further evidence for the construct validity of the Anxiety Differential.

- 10:20. The effects of manifest anxiety and instructions on meaningfulness (*m*). M. RAE SESSIONS AND DONALD H. KAUSLER, *University of Arkansas*.

Meaningfulness (*m*) was investigated as a function of anxiety level (high, middle, and low on the Taylor MAS) and instructions (neutral vs. ego involved). The task consisted of items, representing three levels of *m*, selected from Noble's list. The low MAS group displayed significantly higher association scores to the items than the other two groups. Ego-involving instructions resulted in significantly higher association scores than neutral. No significant interactions

were found between anxiety and instructions or between either anxiety or instructions and level of *m*. The results suggest methodological implications for studies relating anxiety to learning on tasks where difficulty is manipulated by *m*.

- 10:30. Anxiety measures versus the ACE and academic achievement of Negro American college students. S. OLIVER ROBERTS AND ROSE J. WHITE, *Fisk University*.

Testing the hypothesis that the effect of anxiety on performance may be more marked for a minority group, the Mandler-Sarason Test Anxiety Questionnaire and the Taylor Manifest Anxiety Scale were administered to 191 Negro American college freshmen. These data were analyzed by sex, and correlations with ACE scores and grades were computed. The anxiety measures were found to function similarly as in other ethnic samples. Since their effect was no greater for the present group, it was concluded that these personality variables, as measured in the present investigation, do not account materially for ethnic differences in test and academic performance.

#### Divisions 8 and 9. Symposium: Role, Personality, and Social Structure

10:00-11:50. Louis XVI Room, Sherman

DANIEL J. LEVINSON, *Harvard University*, Chairman

##### Participants:

NEVITT SANFORD, *University of California*. The case of the college teacher.

ALBERT BIDERMAN, *Bureau of Social Science Research*. The socialization of the captive.

DANIEL J. LEVINSON, *Harvard University*. The case of the mental hospital patient.

#### Division 15. Intelligence and Achievement

10:00-11:50. Promenade Room, Morrison

WILLIAM E. COFFMAN, *Educational Testing Service*, Chairman

- 10:00. A study of relationships between intelligence and reasoning with immediately remembered discrete materials. BERT A. GOLDMAN, *University of Virginia*.

The primary purpose of this investigation was to determine the relationships between performances on a standardized test of intelligence (i.e., the Wechsler Adult Intelligence Scale) and performances on a battery of items which required the subjects to reason

with immediately remembered discrete materials. This latter instrument, entitled the Immediate Memory Reasoning Test (IMRT), was designed by the author for the study and contained 52 items each presented in a viewing screen on separate cards. Data obtained from the IMRT and WAIS scores of 40 eleventh and twelfth grade boys ranging in IQ from 95 to 143 indicated a significantly high degree of relationships (*r*'s ranging from .41 between Block Design and IMRT through .81 between Full Scale WAIS and IMRT) between abilities measured by the WAIS and abilities involved in reasoning with immediately presented discrete materials.

- 10:14. Age and sex differences in performance on the Primary Mental Abilities Test: A longitudinal study. WILLIAM J. MEYER AND A. W. BENDIG, *University of Pittsburgh*.

The performance of 46 boys and 46 girls on the Primary Mental Abilities Test in Grade 8 and again some 3½ years later was examined. Analysis revealed no statistically significant sex differences on any of the abilities at Grade 8; however at Grade 11 girls performed significantly better on the V, R, N, and W factors. Correlations with a measure of achievement were higher for boys, and the V factor correlated highest with achievement than any other factor at both grade levels. Implications for a developmental theory of intelligence are discussed.

- 10:27. A factorial exploration of the domain of achievement motivation. JAMES V. MITCHELL, JR., *University of Texas*.

Twenty-nine indices of achievement motivation were subjected to factor analysis. Six factors were identified: Academic Motivation and Efficiency (the only factor highly predictive of actual academic performance), Wish-Fulfillment Motivation, Nonacademic Achievement Motivation, Self-Satisfaction, External Pressure to Achieve, and Imputed Generalized Motivation without Attendant Effort. Besides verifying the original hypothesis that there are several varieties of "achievement motivation," the results also indicated that: self-rating procedures excelled projective methods in predicting actual academic performance, the projectives were either loaded on wish-fulfillment or error factors, identical responses often had quite different meanings for different subjects.

- 10:40. Friendship choices as related to achievement in the elementary school. WALTER R. BORG, *Utah State University*.

Near-sociometric measures were administered to 900 elementary school pupils in 31 classrooms.



Choices of pupils in the top fourth and middle half in achievement in each classroom were compared to test the hypothesis that friendship choices between pupils of like ability exceed chance. It was found that high students chose significantly more average and low pupils than chance expectation. Average pupils chose more friends from the high and low, and low pupils chose more average pupils, than would be expected. There were no significant differences between the choice patterns of boys as compared with girls, or of fourth grade pupils as compared with sixth grade pupils.

10:54. Influence of anxiety on relationships between intelligence and achievement. BEEMAN N. PHILLIPS AND GEORGE MCBEE, *University of Texas*.

Conceptualizing intelligence in terms of well-established abilities, and utilizing the drive hypothesis of anxiety, it was hypothesized that relationships between intelligence and achievement would be higher among subjects with high anxiety. The 759 seventh grade subjects were selected on the basis of high and low anxiety, middle and lower class status, and sex; and correlations were computed for each of the eight subsamples between intelligence and nine measures of achievement as measured by grades and tests. Relationships were higher for boys, middle class subjects, and for achievement tests; but a number of significant interactions occurred among the variables. The results are interpreted in terms of the drive hypothesis, and attempts are made to explain the interactions in terms of learning theory.

11:08. Nonintellectual factors related to achievement among able high school students. JAMES V. PIERCE, *University of Chicago*.

The identification and operation of variables which differentiate between the able student who is achieving and the one who is not are important concerns of educators today. This study attempts to differentiate between high and low achievers and between boys and girls on a number of "nonintellectual" variables thought to be related to achievement. The results indicate that: high achieving students are better adjusted psychologically; possess more leadership ability; and value school, work, and imagination more highly. The high achieving boys are more self-engaged in achievement tasks and possess more achievement than low achieving boys. There were sex differences on achievement, values, and child rearing practices.

11:21. The influence of mental ability on achievement when socioeconomic status is controlled. RICHARD E. SCHUTZ AND ROBERT L. BAKER, *Arizona State University*.

Mental ability, socioeconomic status, and school achievement all intercorrelate positively. McClelland has suggested that mental ability may function as a "threshold" variable in this situation. A minimal IQ may be required to achieve; but beyond this, variability may be entirely due to SES. The study investigated whether IQ influences academic achievement irrespective of SES. One hundred eighty-six eighth grade pupils were included in the study. Subjects were assigned to a "high" or a "low-average" mental ability group. SES was controlled in analyses of covariance involving seven achievement criteria. The two groups differed significantly on each criterion, even after adjusting for SES.

11:35. Does one year of high school algebra improve college achievement? DOUGLAS G. SCHULTZ, *Applied Psychological Services, Wayne, Pennsylvania*.

The purpose was to compare the first-semester college grade-point average of students who had taken no algebra in high school with that of students who had taken one year, holding constant aptitude and general high school achievement. The subjects were students entering college curriculums not specifically requiring high school mathematics for admission. Small, statistically nonsignificant differences in college achievement were found between the groups when several predictors were partialled out. The results suggest that, for the curriculums involved, including a year of algebra in the high school course does not significantly improve college achievement.

#### Division 17. A Symposium Honoring Donald G. Paterson: Vocational Counseling—Past, Present, and Future

10:00–11:50. Constitution Room, Morrison

E. G. WILLIAMSON, *University of Minnesota*,  
Chairman

Participants: MORRIS S. VITELES, *University of Pennsylvania*; ARTHUR H. BRAYFIELD, *Pennsylvania State University*; AND LEONA E. TYLER, *University of Oregon*.

#### Division 18. Symposium: The Public Health Approach to Mental Health Research

10:00–11:50. Grand Ballroom, Morrison

GORDON A. BARROWS, *Indiana Division of Mental Health*, Chairman

## Participants:

THOMAS F. A. PLAUT, *Harvard School of Public Health*. Some problems in the application of public health methods and concepts to mental health research.

VICTOR J. FREEMAN, *University of Pittsburgh*. Differential levels in mental health research.

HAROLD SKEELS, *National Institute of Mental Health*. False positives in research.

ELLIOTT G. MISHLER, *Massachusetts Mental Health Center*. The path to psychiatric treatment; A conceptual framework for research.

JOSEPH ZUBIN, *New York State Department of Mental Hygiene*. The revolution in psychopathology and its implication for epidemiology.

Discussants: MELVIN P. REID, *Florida State Board of Health*; ANDIE KNUTSON, *University of California School of Public Health*.

#### Divisions 20 and 22. Symposium: Rehabilitation of the Aged and Chronically Ill

10:00-11:50. Bernard Shaw Room, Sherman

ROBERT W. KLEEMEIER, *Washington University*,  
Chairman

## Participants:

RICHARD N. FILER AND DESMOND D. O'CONNELL, *VA Center, Wood, Wisconsin*. The effect of an experimentally produced "useful contribution" climate on the attainment of rehabilitative goals by institutionalized aged and disabled.

HAROLD J. PALMER, *VA Center, Bath, New York*. Indices of rehabilitation potential in a VA domiciliary.

PATRICIA J. LIVINGSTON, *New York University*. The work attitudes of chronically ill and aging persons.

MORTON ZIVAN, *Institute of Physical Medicine and Rehabilitation, New York*. The effect of work on the chronically ill and aged.

ALLEN SPEISER, *Altro Health and Rehabilitation Services, Inc., New York*. Adjustment in a sheltered workshop.

#### Divisions 2 and 12. Symposium: Should Clinical Psychology be Taught to College Undergraduates?

11:00-12:50. Bal Tabarin, Sherman

RALPH H. TURNER, *Oberlin College*, Chairman

## Participants:

HENRY E. KLUGH, *Alma College*. Clinical psychology for undergraduates; A middle position and a problem of definition.

WILBERT S. RAY, *Bethany College*. Undesirable consequences of teaching clinical psychology to undergraduates.

JOHN M. HADLEY, *Purdue University*. Clinical psychology and the public interest; A favorable view of teaching clinical psychology to undergraduates.

MARGUERITE R. HERTZ, *Western Reserve University*. "... they stumble that run fast."

ELTON B. McNEIL, *University of Michigan*. Clinical training and clinical techniques for teachers of undergraduates.

#### Divisions 5 and 15. Symposium: Criteria of Performance in School Administration

11:00-12:50. Burgundy Room, Morrison

HERBERT S. CONRAD, *United States Office of Education*, Chairman

## Participants:

GLEN STICE, *Educational Testing Service*. The use of simulation in the study of the elementary school principalship.

NORMAN FREDERIKSEN, *Educational Testing Service*. The measurement of administrative performance factors using in-basket tests.

JOHN K. HEMPHILL, *Educational Testing Service*. Judgments of the effectiveness of performance in school administration.

DANIEL GRIFFITHS, *Teachers College, Columbia University*. The implications of criteria of performance for the training of school administrators.

Discussants: HAROLD GUETZKOW, *Northwestern University*; AND SAUL B. SELLS, *Texas Christian University*.

#### Divisions 7 and 15. Symposium: Research in Productive Thinking Processes in Children

11:00-12:50. Hollywood Room, Morrison

CHARLES D. SMOCK, *Purdue University*, Chairman

## Participants:

JEROME KAGAN, *Fels Research Institute*. Styles of conceptualization: Their significance for intellectual and personality variables.

J. RICHARD SUCHMAN, *University of Illinois*. Inquiry training: Teaching children skills and strategies for productive thinking in science.

JAMES G. GALLAGHER, *University of Illinois*. Productive thinking of gifted children in the classroom.

E. PAUL TORRANCE, *University of Minnesota*. Factors affecting creative thinking in children.

Discussant: CHARLES D. SMOCK, *Purdue University*.

#### Division 8. Creativity and Cognition

11:00-11:50. Jade Room, Sherman

MILTON ROKEACH, *Michigan State University*,  
Chairman

11:00. Group creativity under conditions of success-failure and variations in group stability. ROBERT C. ZILLER, RICHARD D. BEHRINGER, AND JACQUELINE D. GOODCHILDS, *Fels Group Dynamics Center, University of Delaware*.

This study deals with the creativity and problem solving performances of groups with a history of success or failure followed by four variations of group stability: the addition, replacement, or removal of a member, and a control condition in which the original group composition was maintained. It was hypothesized: (a) Open groups (the addition, replacement, and removal conditions) are more creative than closed groups (the control condition). (b) Perceived probability of goal attainment following a history of failure is greater in open groups; but following a history of success, it is greater in closed groups. Only the first hypothesis was supported. The results also indicated ( $p < .05$ ) that the newcomer conforms to the group decision to a greater degree than the regular members.

11:10. Regression as an aid to subliminal sensitivity. MURIEL FOX, *New York University*.

Studies have suggested that subliminal effects, though highly variable, are more likely to develop when subjects minimize the demands of reality. Apparently, subjects who are highly sensitive to subliminal stimuli are more capable of regression: they are guided more by feelings and fantasies than by reality cues. An experiment on subliminal stimulation tested this hypothesis by analyzing verbal responses of subjects who were most and least sensitive to subliminal stimulation. Protocols were rated on a seven-point scale of regression. Regressive responses were significantly related to subliminal sensitivity, supporting the hypothesis.

11:20. Male superiority in "intuitive" problem solving. RICHARD S. CRUTCHFIELD, *University of California, Berkeley*.

Two groups (179 experimental subjects and 199 controls) were tested on three puzzles requiring spatial reorganization. Immediately beforehand, the experimentals worked on three tasks containing spatial cues relevant to the puzzle solutions. The controls worked on similar tasks not containing such cues. The experimentals significantly surpassed the controls in percentage of solutions, and this occurred *without awareness* of the relevance of the cues. But this "intuitive" use of cues was found in males only. Experimental and control females did not differ; experimental males markedly surpassed male controls (e.g., 57% solutions vs. 27%). Implications for understanding personality differences in creative problem solving are discussed.

11:30. Thought sequences in creative problem solving. BETTY HOSMER MAWARDI, *Harvard University*.

For several years a group of inventors have been producing novel solutions to knotty problems in industry. This study looks at the thought processes taking place while the group members attain a creative answer to an actual problem posed their firm. Investigation of idea units was made by the four-fold category system of A (abstract thoughts), I (instrumental ones), M (metaphoric ideas), and O (orientational or group process statements). Analyses of sequences showed that AIMO thoughts, in that order, were present in excess of chance, whereas sequences in the reverse order fell far below chance. Double alternating series (i.e., AMAM) also appeared more than the expected values.

#### Division 9. Invited Address

11:00-12:50. Parlor F, Morrison

URIE BRONFENBRENNER, *Cornell University*,  
Chairman

ALEXANDER MINTZ, *City College of New York*. Recent Advances in Soviet Psychology and Their Significance.

Discussants: YVONNE BRACKBILL, *Johns Hopkins University*; HAROLD SCHLOSBERG, *Brown University*; AND URIE BRONFENBRENNER, *Cornell University*.

#### Division 12. Verbal and Operant Conditioning

11:00-12:50. Grand Ballroom, Sherman

IRA ISCOE, *University of Texas*, Chairman

- 11:00. Conditioning verbal behavior of schizophrenics in a group therapy-like situation: A methodological approach. MICHAEL DINOFF, ROBERT F. HORNER, B. S. KURPIEWSKI, AND EDWIN O. TIMMONS, *VA Hospital, Tuscaloosa, Alabama*.

In group psychotherapy the assumption is made that the same laws of verbal conditioning are involved as have been shown to apply in individual psychotherapy. Using a newly developed, easily scored, and highly reliable scoring system, individual verbal response levels were established in a group situation with a schizophrenic population. Elicitation and verbal reinforcement were employed to condition and then countercondition either personal or group references. Differences emerged in keeping with predictions. Of greatest import is the method of measuring the initial verbal behavior as well as assessing the resulting dependent variable.

- 11:15. Status and personality of the experimenter as a determinant of verbal conditioning. PAUL EKMAN AND WALLACE V. FRIESEN, *United States Army Hospital, Fort Dix, New Jersey*.

This study was designed to investigate the effects of the status and personality of the individual administering reinforcement, on the conditioning of hostile responses to peer photographs. Personality was held constant by having the same experimenter condition three groups of subjects while assuming three different status roles. Within two of the status categories, additional groups of subjects were seen by two separate examiners, in order to measure differences which could be attributed to personality. While no differences in the absolute amount of conditioning were obtained, rate of conditioning was related to both status and personality.

- 11:30. Conditioning neurotic verbalizations. LOUIS EVERSTINE AND ALBERT W. BENDIG, *University of Pittsburgh*.

Research in verbal conditioning has shown that, under various conditions of reinforcement, subjects can be trained to more frequently verbalize such material as plural nouns, personal pronouns, certain types of inkblot percepts, etc. More recent efforts have been directed to the conditioning of verbalizations of attitudes, opinions, and the like; and the paradigm has subsequently been extended to the conditioning of "affective" statements such as those involving hostile content. The present study represents an attempt to show that verbalizations rated as "neurotic" in content can be elicited and their frequency of occurrence increased with reinforced training.

- 11:45. Operant conditioning of human motor behavior without subjects' awareness. JOYCE C. DRISKELL AND D. L. TREMAINE, *Roosevelt University*.

Recent investigations have pointed to the relevance of concepts of conditioning in the possible theoretical explication of psychotherapy. The procedure of operant conditioning is particularly pertinent. The behavior during operant conditioning is "natural" rather than artificial. Any identifiable instance of behavior may be reinforced. The matter of awareness has received important consideration in almost any psychotherapeutic school. This experiment used 23 college students from introductory psychology classes. The experimental subjects significantly increased the use of reinforced motor behavior. The reinforced motor behavior of the subjects, who were not aware of it, could be extinguished.

- 12:00. Conditioning of hostile and friendly responses to peer photographs. WALLACE V. FRIESEN AND PAUL EKMAN, *United States Army Hospital, Fort Dix, New Jersey*.

This study explored whether there might be any difference in conditioning two opposite responses which might differ in their emotional significance to the subjects. Like and dislike responses to peer photographs were chosen since prior research reported a failure in conditioning dislike responses. This was attributed to a stigma associated with negative evaluations of peers. In the present research, when the operant level of the conditioned response was controlled, there was no difference in either the amount or rate of conditioning for like or dislike responses.

- 12:15. The experimental manipulation of continuous speech in schizophrenic patients. KURT SALZINGER, STEPHANIE PISONI, AND RICHARD S. FELDMAN, *New York State Department of Mental Hygiene and Columbia University*.

Continuous samples of spontaneous speech were obtained from schizophrenics by instructions given at the beginning of the session. No questions or special stimulus materials were used. The effects of reinforcement on total amount of speech and on affect statements were investigated. It was found that subjects receiving reinforcement every 30 seconds (provided they were speaking) showed significantly more speech than subjects receiving no reinforcement; number of affect statements did not differ for the two groups. The group for which affect statements were followed by reinforcement showed significantly more affect statements but no increase in total amount of speech.



12:30. The unidimensionality of verbal affect and its distinctiveness from verbal nonaffect. STEPHANIE PISONI AND KURT SALZINGER, *New York State Department of Mental Hygiene and Columbia University*.

The study was undertaken to determine whether the subclasses of positive and negative affect constitute a single dimension and whether they differ from a class of nonaffect statements. This was tested by examining the effect of verbal reinforcement on each category. A comparison of the magnitudes of conditioning and extinction of positive affect, negative affect, and nonaffect revealed no significant differences. Rate of utterance of both positive and negative affect was determined by operant level and reinforcement, while nonaffect was influenced by reinforcement only: thus indicating that affect is one dimension, while nonaffect constitutes another.

## SATURDAY AFTERNOON, SEPTEMBER 3

### Division 8. Personality Measurement

12:00-12:50. Jade Room, Sherman

WARREN T. NORMAN, *University of Michigan*,  
Chairman

12:00. The meaning of response set in personality inventories. HAROLD WEBSTER, *University of California, Berkeley*.

A number of randomly selected personality inventory items scored "false" will form a "response set" (RS) scale of good internal consistency; reliability can be further increased by item analysis. RS contains a large amount of "suppression factor" content, as found in the MMPI K scale; a few items scored "true," which correlate positively with RS, best reveal the characteristic measured, which may contain effects due to repression. In line with theory, RS correlates with measures of social alienation and schizoid functioning, with rare-response scales, and with adjective check-list scores which measure degree of positiveness ("goodness") of self-description.

12:10. Further data on projective measurement of need: Scoring procedures, reliability, Zeigarnik effect, and simple task performance. NORMAN E. WALLEN, *University of Utah*.

A projective device modeled after "A Test of Insight" by E. French has been developed which provides measures of four needs: achievement, affiliation, recognition, and control. A scoring system based on defined categories was developed but found to be inferior to a rating technique in terms of scoring

agreement and predicted relationship to performance measures. Stability of need scores over a six-week period was found to be approximately .45 for three of the needs; affiliation being considerably lower at .17. Interrelationships among the needs, relationships to Zeigarnik effect and simple task performance, and differences between males and females are presented.

12:20. Usefulness of a sentence completion test in the prediction of subsequent adjustment or maladjustment in adolescents. GORDON P. LIDDLE, *University of Chicago*.

This study uses several reality variables to get at the validity of a Sentence Completion Test (SCT) designed to measure adolescents' maturity of approach to four developmental tasks. The test was administered to the tenth grade public school population of a midwestern city. It was designed to measure: achieving autonomy, learning one's sex role, accepting one's self as a worthwhile person, and acceptance of and respect for others.

12:30. Factor structure and factorial invariance in the California Psychological Inventory. JOHN PIERCE-JONES, JAMES V. MITCHELL, JR., AND F. J. KING, *University of Texas*.

California Psychological Inventory scores for two descriptively different samples—university undergraduates ( $N=258$ ), city school superintendents ( $N=156$ )—were intercorrelated by the product-moment method, subjected to separate centroid analyses, and, subsequently, to separate analytic orthogonal rotations by varimax technique. Analyses and rotations were made by an IBM 650 computer using like methods for both samples. The rotated factor matrices, each containing four factors having several subscales in common, were compared by Ahmavaara's "transformation analysis." Factors I (Adjustment by Social Conformity) and II (Social Poise) were invariant in the two analyses; Factors III and IV were less similar. Other conclusions are discussed.

### Division 17. Contributed Papers III

12:00-12:50. Room 427, Morrison

BARBARA A. KIRK, *University of California*,  
Chairman

12:00. Male and female personality correlates of early termination in counseling. ALFRED B. HEILBRUN, JR., *State University of Iowa*.

The personality characteristics of college students who dropped out early or stayed in personal counsel-

ing were compared. The major finding was a sex-by-stay category interaction on selected Need Scales for the Adjective Check List. Male nonstay clients, relative to male stay clients, were more need-achieving, autonomous, and dominant and less deferent and abasing. Female nonstay and stay clients showed exactly the opposite pattern of traits relative to each other. These findings suggest that the male or female client who terminates early conforms more closely to the cultural personality stereotype appropriate to his or her sex than does the stay counterpart.

- 12:10. The use of the California Psychological Inventory in a university counseling service. LEONARD D. GOODSTEIN, JOHN O. CRITES, ALFRED B. HEILBRUN, JR., AND PETER P. REMPEL, *State University of Iowa*.

To evaluate the diagnostic usefulness of the California Psychological Inventory (CPI) in a university counseling service, six groups of male and female personal adjustment clients, vocational-educational clients, and nonclients were compared on overall CPI profile elevation, profile shape, individual scales, and pairs of scales. The findings indicated consistent psychologically meaningful differences between the several groups in all aspects of the profile comparisons. Specifically, the nonclients appeared to be the best adjusted, the personal adjustment clients the most poorly adjusted, and the vocational-educational clients appeared at an intermediate level of adjustment. Similarly, there were significant differences between the adjustment modes among the three groups.

- 12:20. Unconscious motives revealed by adult clients requesting counseling services from a university counseling center. PETER J. HAMPTON, *University of Akron*.

An attempt was made to locate the unconscious motives of 300 adult clients referred to a university counseling center for counseling, guidance, or psychotherapy. Unconscious motives were located by applying the Dollard and Auld content-analysis method to sentence completion material. Results indicate differences in kinds and strength of unconscious motives in the three groups of clients. They suggest that unconscious motives can be located during the psychodiagnostic evaluation of a client, can reveal whether a client is a good prospect for therapy, can be helpful in planning extent and kind of therapy, and can shorten psychodiagnostic and psychotherapeutic services. The study also points the way to application of the Dollard and Auld content-analysis method to autobiographical, personal data, and projective personality material.

- 12:30. Factors related to success and failure in client-centered therapy. ESSELYN C. RUDIKOFF, *University of California, Berkeley*. (Sponsor, John M. Butler)

Before therapy, unsuccessful cases described themselves, in essence, either as sufficiently satisfied with their achievements and/or sufficiently comfortable in interpersonal relationships that motivation for therapy apparently was not strong, or as so unable to be productive and as so uncomfortable with others that apparently they found counseling too painful to persevere in the process. A position between these extremes is revealed by the successful cases. They described themselves as sufficiently dissatisfied with their achievements and as sufficiently uncomfortable in interpersonal relationships to be motivated for treatment, as well as sufficiently assertive to be able to follow-through in therapy.

#### Division 2. Panel Discussion: Old and New Directions for the Undergraduate Curriculum in Psychology: A Report of the 1960 Ann Arbor Conference

1:00-2:50. Parlor B, Morrison

JOHN E. MILHOLLAND, *University of Michigan*,  
Chairman

W. J. McKEACHIE, *University of Michigan*. The experience of colleges with the 1951 Wolfe committee curriculum.

#### A. The Conference Recommendations

W. A. HUNT, *Northwestern University*; R. LEEPER, *University of Oregon*; AND W. RAY, *Bethany College*.

#### B. A Proposed Implementation of the Recommendations

R. L. ISAACSON, *University of Michigan*; J. V. McCONNELL, *University of Michigan*; AND E. L. WALKER, *University of Michigan*.

#### Division 2. Symposium: Teaching Values

1:00-2:50. Parlor D, Morrison

F. McKINNEY, *University of Missouri*, Chairman

#### Participants:

F. McKINNEY, *University of Missouri*. Teaching values.

G. MURPHY, *Menninger Foundation*. Can basic values be changed?

D. E. BERLEW, *Knox College*. How can values be taught?

D. O'DONOVAN, *University of Missouri*. The value of valuing.

I. LEHMANN, *Michigan State University*. Evaluating values.

Discussants: C. E. OSGOOD, *University of Illinois*; P. CHAHBAZI, *Western Michigan University*; AND J. H. VOOR, *Bellarmino College*.

#### Division 8. Attitude Change

1:00-1:50. Jade Room, Sherman

HAROLD PROSHANSKY, *Brooklyn College*, Chairman

1:00. The effects of punishment of behavior upon change in belief. BERTRAM H. RAVEN AND MARTIN FISHBEIN, *University of California, Los Angeles*.

Subjects were asked to indicate whether or not they were receiving ESP messages, which were presumably sent for 12 successive transmissions. Half the subjects received shock when they indicated non-reception. It was predicted that shock would introduce conflict and "nonreceivers" who accepted this shock would experience dissonance. This dissonance might be reduced by rejecting belief in ESP. A high latency of response for females indicated that they did indeed show this conflict, and these subjects did reduce their beliefs in ESP significantly more than did the other subjects. Nonshocked females and males in both conditions showed little conflict and less change in belief.

1:10. The relative effectiveness of active and passive prior defense in immunizing beliefs against persuasion. WILLIAM J. MCGUIRE, *University of Illinois*.

The postulate that people tend to avoid exposing their beliefs to contrary information led to predictions regarding the effectiveness of forced pre-exposure to weakened counterarguments in immunizing beliefs against persuasion by subsequent strong attacks. As predicted, the pre-exposure defense involving passive reception is more effective than active participation in immunizing against subsequent strong forms of the pre-exposed counterarguments, while active participation proved more effective against alternative counterarguments ( $p < .01$ ). The immunizing superiority of double (active plus passive) pre-exposure over single was, as predicted, greater when subsequent strong attacks used the same, than when alternative, counterarguments ( $p < .05$ ). Predicted order effects were not significant.

1:20. Opinion change as mediated by an objectively developed film. EDWARD LEVONIAN, *University of California, Los Angeles*.

The results from studies involving opinion change mediated by films have not been encouraging. Of 15 such studies, four showed no significant opinion change, while four more revealed significant changes in the direction opposite to that anticipated. In none of these studies was the film objectively developed for the study. The film which was prepared for the present study was developed on the basis of a factor analysis of a film questionnaire, an instrument intended to reveal the principal opinion dimensions with respect to India. The ten opinion dimensions which emerged dictated the development of a film containing ten sequences. The opinion change of the experimental group (324 subjects), when compared against the control group (216 subjects), was significant ( $t = 32.4$ ) and in the anticipated direction.

1:30. Reference groups and opinion change. HARRY A. BURDICK AND JOSEPH BERGER, *Stanford University and Filene Foundation*.

We attempted to predict, before-the-fact, from reference group allegiance, and incorporated reference group concepts into a more generalized statement concerning reinforcement contingencies. One necessary condition for reinforcement involves feedback concerning the opinion. By manipulating feedback we created groups which were differentially vulnerable to opinion influence. Our experiment is a critical test for the reference group concept since, by mere reference group arousal, we attempted to alter opinions about the same question in two contradictory directions. Our findings were confirmatory regarding the efficacy of the reference group manipulation. Questions concerning the greater influence of reference groups when in a sanctioning position, however, were encountered.

#### Divisions 8 and 9. Symposium: The Development of Cooperation Among Human Beings

1:00-2:50. Crystal Room, Sherman

B. T. JENSEN, *System Development Corporation*, Chairman

##### Participants:

R. G. BARKER AND W. LE COMPTE, *University of Kansas*. Ecological factors determining cooperation among children.

B. T. JENSEN AND N. JORDAN, *System Development Corporation*. The development of cooperation in three-man crews operating a simulated man-machine system.

J. D. FORD AND R. V. KATTER, *System Development Corporation*. The development of cooperation between an officer and his enlisted man technician.

J. L. KENNEDY AND J. DURKIN, *Princeton University*. Studying the development of a team as a synthetic organism.

Discussant: F. MIYAMOTO, *University of Washington*.

#### **Divisions 8 and 9. Symposium: Identity and Role Problems in Sex Variants**

1:00-2:50. Louis XVI Room, Sherman

EVELYN HOOKER, *University of California, Los Angeles*, Chairman

##### **Participants:**

JOHN MONEY, *Johns Hopkins Hospital*. The gender identity of hermaphrodites, with additional reference to effeminate boys, transvestites, and paralytics.

HAROLD GARFINKEL, *University of California, Los Angeles*. Passing and the managed achievement of sex statuses in a series of intersexed persons.

EVELYN HOOKER, *University of California, Los Angeles*. Identity and gender role problems in the male homosexual.

#### **Division 12. Symposium: Postdoctoral Training Programs in Clinical Psychology**

1:00-2:50. Emerald Room, Sherman

LESLIE PHILLIPS, *Worcester State Hospital*, Chairman

##### **Participants:**

ROGER BIBACE, *Worcester State Hospital*. Postdoctoral programs: Past and present.

NORMAN GARMEZY, *Duke University*. Postdoctoral programs and their relation to graduate education.

SHELDON J. KORCHIN, *Michael Reese Hospital*. Postdoctoral training as a future direction in clinical psychology.

Discussants: ELIOT H. RODNICK, *Duke University*; AND ANSELM STRAUSS, *University of California, Berkeley*.

#### **Divisions 13 and 22. Symposium: Adjustment to Long-Term Hospitalization**

1:00-2:50. Gold Room, Sherman

ROBERT P. BARRELL, *Veterans Administration, Downey, Illinois*, Chairman

##### **Participants:**

MORTON A. SEIDENFELD, *Office of Vocational Rehabilitation*. The adjustment to long-term hospitalization of the orthopedically disabled.

LEONARD BORMAN, *VA Hospital, Downey, Illinois*. The chronic patient in the hospital culture.

KARL H. PFUETZ, *Chicago State Tuberculosis Sanitarium*. The physician's role in the patient's adjustment to long-term hospitalization.

NICOS MOURATIDES, *VA Hospital, Downey, Illinois*. Chronicity and decision making among professionals in mental hospitals.

#### **Division 15. Learning, Personality, and Mental Health**

1:00-2:50. Promenade Room, Morrison

JOHN E. HORROCKS, *Ohio State University*, Chairman

1:00. The influence of parental demands on the development of oral communication skills in older children. MICHAEL MARGE, *Montclair State College*.

In this investigation the primary purpose was to explore the influence of certain home background variables on the development of oral communication skills in preadolescent children. The general theoretical construct, No Demands vs. High Demands, was selected as one of the antecedent variables. The correlations between the demands variable and the criterion scores (representing measures of speaking ability of the subjects) revealed that, contrary to expectation, in general parental demands did not show a marked trend with general speaking ability. However, the effects of parental demands on the speech skills development of boys differed significantly from those of girls.

1:12. The adequacy of "meaning" as an explanation for the superiority of learning by discovery: Experiment II. BERT Y. KERSH, *System Development Corporation, Santa Monica, California*.

Previous research by Kersh has indicated that the superiority of learning by independent discovery over learning with direction is best explained in terms of motivation or interest. In the present experiment the methodology was changed in an attempt to more effectively control the dimension of "meaning" and to obtain more formal evidence of differences in motives and interest. The results were the opposite of those obtained previously: the group that was taught the rules directly and without explanation was superior in terms of retention and transfer, and no group was outstanding in terms of motivation or interest.



- 1:25. Utilizing student response to improve televised instruction. G. L. GROPPER AND A. A. LUMSDAINE, *American Institute for Research, Pittsburgh, Pennsylvania.*

This study is concerned with ways of providing feedback to TV instructors about material in their lessons that is not understood or that is misconstrued. Achievement test data obtained from students who have been shown a preliminary version of a lesson are used to provide such feedback. Results indicate that lessons revised on the basis of such feedback are learned significantly better than the original versions of those lessons. Other experiments concerned with the effect on learning of active student response during televised instruction are described.

- 1:37. Criterion measures: Instruction vs. selection research. JOSEPH HAMMOCK, *Bell Telephone Laboratories, Murray Hill, New Jersey.*

Tests developed as criteria for selection research or as achievement screening tests are frequently used as criteria for the experimental evaluation of alternative instructional techniques. In other cases, measures developed as criteria for instructional research are constructed according to accepted procedures for building selection criteria. An analysis of the desired attributes of instructional research criteria indicates that selection criteria and other measures designed to be optimally sensitive to individual differences may not be optimally suited as measures of instructional treatment effects. A rationale is presented for the development of instructional research criteria and is extended to other research areas, e.g., motivation.

- 1:50. Personality differences among college curricular groups. CARL BEREITER AND MERVIN B. FREEDMAN, *Vassar College.*

A technique of factor rotation based on mean factor scores was applied to the analysis of differences among Vassar College curricular groups on the Vassar Attitude Inventory scales. Three factors emerged. Two factors on which groups differed were identified as Unconventionality and Social Confidence. The third factor, on which group differences were zero, was identified as Emotional Stability. The utility of these factors for explaining previously observed differences in psychological adjustment and liberalism are discussed.

- 2:02. A factor analysis of selected measures of needs, need-related anxiety, adjustment, and cognitive functions. RALPH L. DUKE, JOHN PIERCE-JONES, AND GEORGE MCBEE, *University of Texas.*

Child's needs scales (Murray's *n* Achievement, autonomy, nurturance, dominance, aggression) and

need-relevant anxiety measures were scored for 500 adolescents and correlated in a  $21 \times 21$  matrix with 11 tests found by independent factorizations to represent factors of scholastic talent, scholastic motivation, adjustment and anxiety, divergent thinking abilities, etc. The hypothesis that three factors previously located by factoring Child's inventory—i.e., "anxiety," "aggressive power-seeking," "socially modified *n* Ach"—would load in various reference tests was unsupported by subsequent centroid analysis and analytic orthogonal rotations which produced seven factors: "need-anxiety," "adjustment anxiety," "need Achievement," "scholastic achievement," et al. Conclusions are discussed.

- 2:14. Discrepancy between teachers' educational values and institutional norms as a motivating variable. IRENE A. NICHOLS, W. CODY WILSON, AND GEORGE W. GOETHALS, *Harvard University.*

The investigators present the hypothesis that the degree of "attraction" a situation has for an individual is negatively related to the size of the discrepancy between the individual's personal values and his perception of the institutional norms governing that situation. The data consist of 260 teachers' responses to an extensive questionnaire. These responses reflect: their personal educational values, their perception of the institution's educational norms, and their tendency to be attracted to the teaching situation. Discrepancy scores were computed and correlated with indices of "attraction." Results were in the predicted direction and significant beyond the .01 level.

- 2:26. Mental health effects of a one- and two-year causal learning program on sixth grade subjects when IQ, age, and sex are controlled. ROLF E. MUUSS, *Goucher College.*

The study investigates to what extent participation in an experimental preventive psychiatry program contributed to mental health as measured by ten tests. A control group, a one-year experimental group, and a two-year experimental group of 25 subjects each were matched in IQ, sex, and age. Data were analyzed by way of randomized analysis of variance design followed by *t* tests. In six out of ten tests significant differences were found between two-year experimental subjects and control subjects; significant differences were found between the one-year and the two-year experimental subjects in five out of ten tests.

- 2:38. Changes in adjustment during a course in mental hygiene. CONRAD CHYATTE, *DePaul University.*

If exposure to a course in Mental Hygiene produces an improvement in the level of students' adjustment, evidence of the change may be detectable psychometrically. Therefore, the Adjustment Inventory (Bell) was administered to a class of 37 students in Mental Hygiene, once during the first lecture period of the quarter and again during the last period. The only statistically significant change observed indicated that these students became more *maladjusted* in the home situation as a function of exposure to the course. It would appear from these data that the outlook for immediate improvement in adjustment as the result of taking a course in Mental Hygiene is rather bleak.

#### Films.

1:00-4:50. Terrace Casino, Morrison

#### APA. Symposium: Perspectives in International Psychology: Reports from Bonn and Moscow

2:00-3:50. Cotillion Room, Morrison

HENRY P. DAVID, *New Jersey Department of Institutions and Agencies*, Chairman

Participants: JOHN DARLEY, *APA Central Office*; GORDON F. DERNER, *Adelphi College*; JAMES GIBSON, *Cornell University*; OTTO KLINEBERG, *Columbia University*; NEAL MILLER, *Yale University*; AND ROGER RUSSELL, *Indiana University*.

#### Division 8. Cognitive Processes

2:00-2:50. Jade Room, Sherman

DONALD CAMPBELL, *Northwestern University*, Chairman

2:00. Forgetting of humor: Repression? JOAN C. LEE AND RICHARD M. GRIFFITH, *University of Kentucky and VA Hospital, Lexington*.

The elusiveness of jokes, observed by most of those who would retell them, is attributed by psychoanalysis to repression. Humor, like dreams, slips by the censor, who quickly recloses the door. In this study a large number of *New Yorker* cartoons were paired randomly for each subject who chose the one of each pair which was the funnier. A month later each subject returned to sort the original cartoons from some new ones mixed in with them. Contrary to what should be expected were repression an active force, subjects correctly identified more of those cartoons which had previously impressed them as funny.

2:10. The relation of dissonance reduction to cognitive style and decision certainty. SIDNEY ROSEN, *Marquette University*.

Dissonance-reducing behavior probably entails risk-avoidance and should therefore relate to cognitive variables known to involve risk-avoidance. It was hypothesized that the cognitive style known as width of categorizing and that decision certainty (in categorizing) would relate inversely to dissonance-reduction. Dissonance-reduction scores of subjects who had previously participated in a "dissonance" experiment were compared with scores on Pettigrew's Category Width Scale and on a scale of decision certainty. The inference that dissonance-reducing tendencies entail risk-avoidance received support, mainly from males, in relation to category width, but no support in relation to decision certainty.

2:20. The effect of effort on the attractiveness of a stimulus. ELLIOT ARONSON, *Harvard University*.

Festinger's theory of cognitive dissonance implies that individuals expending effort to attain rewards, upon failing, will attempt to justify this unrewarded effort by attaching value to some other aspect of the situation. In a laboratory experiment subjects were given a repetitive task and were rewarded on one-third of the trials. Rewarded trials were accompanied by the color red, unrewarded trials by green. For half of the subjects the task was made difficult; for the other half it was made easy. The hypothesis was verified by a significant difference between the shift in color preference in the Difficult Condition and that in the Easy Condition.

2:30. Toward a resolution of the ESP controversy. JAMES C. CRUMBAUGH, *Bradley Center, Columbus, Georgia*.

The present experimenter has duplicated many of J. B. Rhine's ESP techniques with consistently negative results, but Rhine claims that variables of the experimenter's personality and attitude toward ESP affect results and doom some experimenters to failure. For a similar reason he rejects the criterion of repeatability as a requirement for proof of the ESP hypothesis, holding that unknown variables make its present control impossible. This experimenter fractionated both experimenters and subjects on variables of personality and attitude believed important in the positive studies, again with negative results. He holds that, until a repeatable experiment is produced, the ESP hypothesis must remain in question, and proposes a design to attack this problem.

**Division 12. Disturbed, Retarded, and Delinquent Children**

2:00-3:50. Ruby Room, Sherman

ROBERT C. CHALLMAN, *Minneapolis*, Chairman

- 2:00. Psychological characteristics of mentally retarded adolescents as related to their etiology and sex. RUTH ANNE FUNK AND R. J. CAPOBIANCO, *Oneida County Child Guidance Clinic, Utica, New York, and University of Minnesota.*

The study investigated the interrelationships among intellectual, Rorschach, electroencephalographic, and achievement variables in matched groups of exogenous and endogenous retarded adolescents. EEG findings show convulsive or focal abnormalities in 58% of the *familial* group. Girls showed a correlation of .49 between EEG alpha index and reading achievement. Formal Rorschach scores differentiated etiology groups more significantly than did organic "signs." More than one organic Rorschach pattern was seen. Rorschachs also varied with the interaction of etiology and EEG characteristics. Sex differences were noted in WISC, Rorschach, and reading variables, with boys' achievement being less predictable and more susceptible to emotional influences.

- 2:10. The effects on frustration tolerance of repeated mild-to-moderate frustration experiences. VIRGINIA CURRAN SHIPMAN AND WILLIAM J. MEYER, *University of Pittsburgh.*

This study attempted to determine to what extent repeated mild-to-moderate frustration experiences raise or lower one's tolerance to similar and dissimilar kinds of frustration. Before and after training, 56 institutionalized retarded children were each given a discrimination problem under neutral, distraction, and failure conditions. The training involved controlled experiences under mildly positive, failure, distraction, or combined distraction-failure treatments. Only those groups with intervening frustration experiences showed increased learning efficiency and flexibility. However, when comparing performance to an entirely different stressor, restricted activity, the frustrated groups showed a decrement suggesting that the increased adaptation was not generalized.

- 2:20. Patterns of mothering affecting children in residential treatment: A comparison of own mothers and mother substitutes. JEAN FERSON AND E. DONALD LONGENECKER, *Woods Schools, Langhorne, Pennsylvania.*

(No abstract received.)

- 2:30. Measuring interaction in nonverbal psychotic children: II. A differential diagnostic instrument. IRA M. STEISEL, I. HYMAN WEILAND, KIRBY SMITH, AND JANICE SCHULMAN, *St. Christopher's Hospital for Children, Philadelphia, and Eastern Pennsylvania Psychiatric Institute, Philadelphia.*

A standard procedure and seven five-point reliable rating scales have been reported. Successful discrimination between psychotic children and "normal" controls in terms of their interactive efforts were obtained. For this current study it was hypothesized that children with organic brain damage would show a *lower* level of interactive ability than "normals" but a *greater* ability to interact than children with schizophrenia. The total scores of each of 23 children with organic brain damage and/or mental retardation were compared with those of 20 children with psychosis and 9 "normals." Statistically significant differences, in the predicted direction, were obtained.

- 2:40. The depression theory of delinquency. DONALD L. WESTON, *University of Colorado Medical Center.*

The depression theory of delinquency states that increased tension produces, in the delinquent, a heightened level of depression which is associated with increased motor activity. The prediction of increased motor activity in conjunction with increased depression is contrary to predictions derived from the general psychoanalytic theory of depression. Thirty delinquent boys were tested before adjudication (tension situation) and two to six weeks later, after disposition (reduced tension situation). Changes in six Rorschach scores constituted the depression measure. Katona matchstick problems measured motor activity. The subjects showed significantly greater motor activity accompanying significantly increased depression. The relationship of defenses, acting out, and depression in delinquency is discussed.

- 2:50. A study of accessibility to group therapy of incarcerated adolescent offenders. IRVING JACKS, *Department of Correction, New York City.*

An 83-item self-administered scale of accessibility to group psychotherapy was developed for use with institutionalized adolescent offenders. Sixty-eight boys at the New York City Correctional Institution for Men constituted the initial validating sample. The criterion to be predicted consisted of the therapists' ratings of patients' accessibility following the twelfth session. Scale scores, obtained in pretherapy administration, correlated .57 with the criterion measure, indicating a potentiality for effective selection of

patients suitable for group therapy through use of such an instrument. Moreover, the correlation coefficient was significantly higher than that obtained with each of three other pretherapy predictors: psychiatric interview, therapist's interview, and psychological testing. Applications to the general problem of patient selection are discussed.

3:00. The validity of the diagnostic process in a child guidance setting: A multidisciplinary approach. PHILIP A. MARKS, *University of Kansas Medical Center*.

(No abstract received.)

3:10. Quantifying diagnostic group assessments. JACOB I. HURWITZ, NORMAN GOLDSTEIN, AND LEONARD HASSOL, *Harvard University and South Shore Guidance Center, Quincy, Massachusetts*.

To permit reliable and replicable diagnostic group assessment of court delinquents and correlation of results with other quantitative data, common intuitive assessment factors were isolated, ordered conceptually, and quantified. High level inferences were operationalized in terms of symptomatic or decision factors. A series of four pretests were conducted by two teams of one leader and two observers each, independent ratings made, and reliability conferences conducted. The schedule was revised after each pretest. Appropriate measurement models were derived after some experimentation. Reliability and construct validity data are presented and plans for empirical validation described.

#### Division 15. Symposium: The Development and Evaluation of a New Guidance Program

2:00-3:50. Burgundy Room, Morrison

HERMAN J. PETERS, *Ohio State University*,  
Chairman

##### Participants:

EDWARD LANDY, *Newton Public Schools*. The need for a group guidance program focusing on self-appraisal for educational and vocational planning.

MARTIN R. KATZ, *Educational Testing Service*. Theories of occupational choice and guidance providing the rationale for *You: Today and Tomorrow*.

BENJAMIN SHIMBERG, *Educational Testing Service*. The evaluation of *You: Today and Tomorrow*: Student learnings and teacher reactions.

WARREN GRIBBONS, *Clark University*. The evaluation of *You: Today and Tomorrow*: Student progress in aspects of "vocational maturity."

Discussant: ARTHUR A. HITCHCOCK, *American Personnel and Guidance Association*.

#### Division 15. Symposium: Education of Gifted Students: Research Findings and Implications

2:00-3:50. Hollywood Room, Morrison

WILLIAM ASHER, *United States Office of Education*,  
Chairman

##### Participants:

PAUL H. BOWMAN, *University of Chicago*. Education of gifted high school youth.

J. W. GETZELS AND P. W. JACKSON, *University of Chicago*. A study of highly creative and of highly intelligent adolescents: The findings to date.

J. KENNETH LITTLE, *United States Office of Education*. Attrition of high ability youth from high school to college graduation.

DAVID B. ORR, *University of Pittsburgh*. Research opportunities in Project TALENT for investigators of gifted adolescents.

Discussant: HARRIET E. O'SHEA, *Purdue University*.

#### Division 17. Symposium: Journals, Editors, and the Scientific Status of Counseling Psychology

2:00-3:50. Grand Ballroom, Morrison

JOHN O. CRITES, *State University of Iowa*, Chairman

##### Participants:

BOYD R. MCCANDLESS, *University of Iowa*. The *Journal of Consulting Psychology* and the scientific status of counseling psychology.

KENNETH E. CLARK, *University of Minnesota*. The *Journal of Applied Psychology* and the scientific status of counseling psychology.

JOSEPH SAMLER, *Veterans Administration*. The *Personnel and Guidance Journal* and the scientific status of counseling psychology.

C. GILBERT WRENN, *University of Minnesota*. The *Journal of Counseling Psychology* and the scientific status of counseling psychology.

Discussant: LEONARD D. GOODSTEIN, *State University of Iowa*.

#### Division 2. Symposium: Values and Teaching: Views of a Historian, a Philosopher, an Educational Broadcaster, a Theologian, and a Psychologist

3:00-4:50. Constitution Room, Morrison

S. K. ATWATER, *Knox College*, Chairman

##### Participants:

D. P. LEONARD, *Department of Philosophy, Hartford College*. The limits of teaching in the humanities for the field of values.



P. E. LICHTENSTEIN, *Department of Psychology, Denison University*. The involvement of fact and value in science.

J. L. STIPP, *Department of History, Knox College*. Some effects of values on teacher-learner relationships.

K. F. SCHMIDT, *Department of Radio-TV Education, University of Wisconsin*. Implications of radio and television in the teaching of values.

Discussant: P. LEFEVRE, *Federated Theological Seminary, University of Chicago*.

### Division 8. Authoritarianism

3:00-3:50. Jade Room, Sherman

DANIEL J. LEVINSON, *Harvard University*, Chairman

3:00. Presidential voting preferences and the authoritarian syndrome. LAWRENCE S. WRIGHTSMAN, JR., ROLAND W. RADLOFF, DAVID W. HORTON, AND MICHAEL MECHERIKOFF, *George Peabody College for Teachers, Yale University, University of Minnesota, and Westmont College*.

A total of 1,142 undergraduates in nine colleges and universities in the four regions of the country were studied by questionnaires to determine (a) the relationship of preferences for President to extent of the authoritarian syndrome and (b) regional and party differences in authoritarian, ethnocentric, conservative, and Machiavellian attitudes. Significant differences in the extent of the authoritarian syndrome were found among supporters of different candidates. Regional and interschool differences were found on each of the attitudinal measures. Results are presented relating the authoritarian syndrome to party preference, sex, race, religious preference, and church attendance.

3:10. The cognitive functions of the authoritarian personality. JACK M. COALE AND M. STEPHEN SHELDON, *System Development Corporation*.

The purpose of this study was to determine the identifiable differences in intellectual functioning between authoritarian and equalitarian (nonauthoritarian) personalities, in terms of subtest deviations of the Wechsler Adult Intelligence Scale (WAIS). Authoritarianism was defined in terms of a score on Forms 45 and 40 of the California F Scale. Though no discernible profile was found for the identification of the authoritarian by the WAIS subtests, as a group, the authoritarians did appear different from the equalitarians. Nine statistically significant differences were found in the initial research, three being

verified in a cross-validation study: in mean subtest deviation score, in overall intelligence, and in relative variability of subtest scores. The indications were that the authoritarian functioned relatively better in a highly structured task, was more anxious as measured by subtest scatter, and was generally less intelligent.

3:20. A note on the fakability of the California F Scale. M. STEPHEN SHELDON, *System Development Corporation*.

This paper is concerned with the nature of the negative correlation between the California F scale and measures of intelligence. Data were gathered concerning the fakability of the CFS and the relationship of the faking to a measure of intelligence. It was found that the subjects, when asked to answer in a socially acceptable manner, appeared to be more authoritarian than they were when responding under normal conditions. Further, those subjects who were brighter raised their scores when faking more than the less intelligent subjects. A number of explanations are presented concerning these data.

3:30. The relationship of authoritarianism and prejudice to church attendance and intensity of belief in faculty members of midwestern colleges and universities. E. L. STRUENING, *VA Hospital, Montrose*.

From formulations of Fromm, Allport, May, Adorno, et al., relationships between prejudice, authoritarianism, church attendance, and intensity of belief of midwestern university faculty members were deduced. Highly internally consistent measures of authoritarianism and prejudice were developed via factor analysis. An  $8 \times 2$ —church attendance by intensity of belief—analysis of variance on 1,387 subjects resulted in  $F$  ratios significant at the 1% level. Church attendance was linearly related to authoritarianism and curvilinearly related to prejudice. The curves were parallel across intensity of belief. Church attendance and intensity of belief were concluded important in predicting the distribution of prejudice and authoritarianism in midwestern university faculty members.

### Divisions 9 and 18. Symposium: Social and Psychological Phenomena Related to the Acceptance of Community Water Fluoridation

3:00-4:50. The Assembly, Sherman

S. STEPHEN KEGELES, *United States Public Health Service*, Chairman

## Participants:

HARRY RAULET, *Harvard University School of Public Health*. The health professional and the fluoridation issue: A case of role conflict.

ARNOLD SIMMEL, *New York State Department of Health*. Relative deprivation as a hypothesis in studying community acceptance of fluoridation.

PERRY OTTENBERG, *University of Pennsylvania Hospital*. Some personality factors of anti-fluoridationists.

Discussants: DONALD J. GALAGAN, *United States Public Health Service*; AND BERNARD MAUSNER, *University of Pittsburgh School of Public Health*.

**Divisions 12 and 15. Symposium: The Psychologist in Undergraduate Medical Education: Innovations in Method and Content**

3:00-4:50. Bernard Shaw Room, Sherman

BERNARD LUBIN, *Indiana University Medical Center*,  
Chairman

## Participants:

WILLIAM F. FEY, *University of Wisconsin*. Five introductions to psychiatry.

CHARLES B. FERSTER, *Indiana University*. A basic science approach to medical psychology.

WALTER KASS AND JOSEPH RICHMAN, *Albert Einstein College of Medicine*. Psychologists' participation in preclinical teaching of psychiatry.

IRWIN J. KNOPF, *Southwestern Medical School, University of Texas*. The contributions of psychology to the beginning course in psychiatry.

Discussant: IVAN N. MENSCH, *University of California Medical Center*.

**Division 15. Educational Staff**

3:00-3:50. Promenade Room, Morrison

HARRY N. RIVLIN, *Board of Higher Education, New York City*, Chairman

3:00. Some relationships between inventory-estimated teacher characteristics and observed pupil behavior. DAVID G. RYANS, *University of Texas*.

Hypotheses regarding interdependency relationships between inventory estimates of teacher characteristics and assessments of pupil behavior in the teachers' classes were tested by correlational analysis. Seven samples included over 2,000 elementary and secondary school classes. The elementary school data suggest significant (moderate positive) relationships between purposive and productive classroom behavior

of pupils and Teacher Characteristics Schedule scores indicative of "warmth and understanding," "organized or businesslike behavior," "original and stimulating behavior," "favorable attitude toward democratic classroom procedures," "emotional stability," and (probably) "liberal educational viewpoint." Secondary school data suggest few significant relationships, the most notable being between highly assessed pupil behavior and the "stimulating" behavior teacher inventory score.

3:10. Personality correlates of teacher classroom behavior. ROBERT S. SOAR, NORMAN D. BOWERS, AND LEO C. RIPPY, JR., *Vanderbilt University, University of North Carolina, and Scarritt College*.

Concerned with teacher personality characteristics as measured by standardized inventories and observed classroom behavior of teachers and pupils, this study found a significant number ( $p < .01$ ) of measured relationships. Maintenance of a warm classroom climate and autonomous small work groups were significantly related to teacher characteristics interpreted as permissive, secure, self-confident, and involved with pupils. Emphasis on written material and lack of pupil skill in effective group activities characterized the classroom where the teacher showed evidences of insecurity, neurotic tendencies, rigidity, and a teacher-centered ideal of the educative process. Additional findings support arguments for a multivariate use of observed classroom behaviors in the study of teacher characteristics.

3:20. Faculty behavior and the career aspirations of talented students. DONALD L. THISTLETHWAITE, *Northwestern University*.

Changes in college major and in the level of training talented students plan to complete were related to faculty press in the student's major field. Teachers in the humanities and social sciences influential in motivating students to seek advanced training were high in affiliation and enthusiasm and exerted press for achievement, humanism, and independence; while influential teachers in the natural and biological sciences were high in enthusiasm and exerted relatively little press for compliance. Peer group norms and values were unrelated to changes in aspiration. Implications for the recruitment and training of talented students are discussed.

3:30. Attitudinal differences among educational administrators, teachers, and specialists. BARTHOLOMEW D. WALL, *Wayne County Board of Education, Detroit, Michigan*.

Educational literature contains references to an "unsatisfactory" state of interpersonal relationships existing among personnel in public schools. The problem has been attributed to attitudinal differences; survey research was conducted among educational administrators, teachers, and specialists to verify or refute the charge. In the belief that educational personnel function professionally along a continuum—which is democratic, liberal, and progressive at one pole; authoritarian, conservative, and traditional at the other—a scale measuring the attitudes of these groups toward their profession, toward their peers' roles, toward child growth concepts, and toward education as a community agency was developed and used. Findings were that specialists appeared to be more liberal, etc. than either administrators or teachers and that teachers were more authoritarian, etc. than administrators. Score differences were significant.

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**APA Board of Professional Affairs. Annual Meeting of State Association Officers**

4:00-5:50. Burgundy Room, Morrison

M. C. LANGHORNE, *Trinity College*, Chairman

Consultants: JANE D. HILDRETH, *APA Central Office*; AND ERASMUS L. HOCH, *APA Central Office*.

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**APA. Conversation-Contact Hour**

5:00-5:50. Promenade Room, Morrison

LEONARD CARMICHAEL, *Smithsonian Institution*, Leader

5:00-5:50. Parlor B, Morrison

ANNE ANASTASI, *Fordham University*, Leader

5:00-5:50. Parlor D, Morrison

JAMES G. MILLER, *University of Michigan*, Leader

5:00-5:50. Parlor F, Morrison

IRVING LORGE, *Columbia University*, Leader

**Division 9. Membership Meeting: Where Does SPSSI Go from Here?**

5:00-6:50. The Assembly, Sherman

Open forum on SPSSI purposes, goals, and directions in the light of recent social change.

**SATURDAY EVENING, SEPTEMBER 3**

**APA. Conversation-Contact Hour**

6:00-6:50. Parlor B, Morrison

C. GILBERT WRENN, *University of Minnesota*, Leader

6:00-6:50. Parlor D, Morrison

STARKE R. HATHAWAY, *University of Minnesota*, Leader

6:00-6:50. Parlor F, Morrison

E. JOSEPH SHOEN, JR., *Columbia University*, Leader

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**APA Committee on Mental Health Research and Programs and APA Convention Program Committee. Symposium: World Mental Health Year**

8:00-9:50. Constitution Room, Morrison

LEONARD CARMICHAEL, *Smithsonian Institution*, Chairman

**Participants:**

FILLMORE SANFORD, *University of Texas*. Findings of the Joint Commission on Mental Illness and Health in relation to World Mental Health Year objectives.

MORTON KRAMER, *National Institute of Mental Health*. The NIMH and World Mental Health Year.

J. R. REES, *World Federation for Mental Health*. The development of the World Mental Health Year and the progress in implementing objectives of the World Mental Health Year.

Discussant: OTTO KLINEBERG, *Columbia University*.

# APA DAY, SUNDAY, SEPTEMBER 4

## Addresses by the Recipients of the 1959 APA Distinguished Scientific Contribution Awards

10:00-12:15. Medinah Temple (600 North Wabash Avenue)

HAROLD SCHLOSBERG, *Chairman*

LEON FESTINGER, *Stanford University*. The Psychological Effect of Insufficient Reward.

DONALD B. LINDSLEY, *University of California, Los Angeles*. Neural Mechanisms and Temporal Factors in Perception.

NEAL E. MILLER, *Yale University*. Some Recent Studies of Conflict Behavior and Drugs.

## Buffet Lunch

12:30-1:50. Medinah Temple

## Address of the President of the APA

2:00-3:15. Medinah Temple

THEODORE M. NEWCOMB, *Chairman*

DONALD O. HEBB. The American Revolution.

## Annual Report to the Members of the APA

3:00-4:45. Medinah Temple

DONALD O. HEBB, *President*

MEREDITH P. CRAWFORD. APA Finances and the 1961 Budget.

LAUNOR F. CARTER. Major Decisions of the 1960 APA Council Meetings.

JOHN G. DARLEY. Annual Report of the Executive Secretary.

## APA Distinguished Scientific Contribution Awards

4:45-5:00. Medinah Temple.

EDWIN G. BORING, *Chairman*

## Awards and Announcements of the American Psychological Foundation

5:00-5:15. Medinah Temple

O. HOBART MOWRER, *President, American Psychological Foundation*

## Reception for the Members of the APA by the Officers and Members of the Board of Directors

7:30. The Assembly, Sherman

## APA Dance

9:15. Grand Ballroom, Sherman



**MONDAY MORNING, SEPTEMBER 5**

**APA Committee on Psychological Tests. Open Meeting on Revisions of the "Technical Recommendations for Psychological Tests and Diagnostic Techniques"**

9:00-11:50. Parlor E, Morrison

JOHN T. COWLES, *University of Pittsburgh*, Chairman

First recognition will be given to APA members who submit their suggestions in advance to the Chairman of the Committee on Psychological Tests.

**Division 2. Symposium: The Early Development of Scientists through Undergraduate Research**

9:00-10:50. Venetian Room, Morrison

H. J. HAUSMAN, *National Science Foundation*, Chairman

**Participants:**

H. J. HAUSMAN, *National Science Foundation*. On becoming a scientist through being a scientist.

D. H. LAWRENCE, *Stanford University*. Involving undergraduates in psychological research at Stanford University.

D. LEWIS, *State University of Iowa*. Involving undergraduates in psychological research at the State University of Iowa.

R. ROSENTHAL, *University of North Dakota*. Involving undergraduates in psychological research at the University of North Dakota.

J. G. SHERMAN AND ROSEMARY PIERREL, *Barnard College*. Involving undergraduates in psychological research at Barnard College.

**Divisions 2 and 14. Symposium: Current Characteristics of Practicum Instruction in Clinical, Counseling, Industrial, and School Psychology**

9:00-10:50. Parlor D, Morrison

T. M. MAGOON, *University of Maryland*, Chairman

**Participants:**

D. K. PUMROY, *University of Maryland*. Clinical psychology practicum instruction.

T. M. MAGOON, *University of Maryland*. Counseling psychology practicum instruction.

R. KATZELL, *New York University*. Industrial psychology practicum instruction.

B. McCANDLESS, *Iowa Child Welfare Station*. School psychology practicum instruction.

Discussant: S. Ross, *APA Central Office*.

**Division 3. Experimental Analysis of Behavior I**

9:00-10:50. Promenade Room, Morrison

THOM VERHAVE, *Eli Lilly and Company*, Chairman

9:00. Component behaviors in free-operant temporal discrimination. ROBERT ORLANDO, *University of Washington*.

Temporal discrimination in a free-operant situation is examined with respect to component behaviors. Basic ability to form simple discriminations, to appropriately withhold from responding under conditions of nonreinforcement, and to use temporal interval as a cue are evaluated in independent tasks with mentally retarded children. Comparison of performances supports the proposition that both a minimum discrimination ability and success in not-responding in the presence of nonreinforcement cues are necessary but not sufficient prerequisites of commonly observed low-rate solutions to fixed interval schedules of reinforcement.

9:10. The effects of reinforcement scheduling on the strength of a secondary reinforcer. RICHARD A. KING AND RONALD E. FOX, *University of North Carolina*.

There is evidence that variables such as motivation, number of training trials, amount of primary reinforcement, and the interstimulus interval are important determiners of the strength of a secondary reinforcing stimulus. These are also variables which determine the strength of a response which has been paired with primary reinforcement. The present experiment was designed to discover whether another such variable, reinforcement scheduling, affects the strength of a secondary reinforcing stimulus. An effect of scheduling was found and is tentatively interpreted in terms of a mediating response paradigm.

9:20. The differentiation of effort. D. E. MINTZ AND J. M. NOTTERMAN, *Princeton University*.

Differential reinforcement of "effort," the time integral of force, was employed in the lever press situation for albino rats while concurrent and independent measures of force and duration were taken. The systematic changes in all three measures were explored under the operations of conditioning, extinction, reconditioning, and with a shift in reinforcement criterion.

9:30. Distance as a dimension of operant behavior.

R. J. HERRNSTEIN, *Harvard University*.

Pigeons pecked at a rubber strip that recorded location in class intervals of 1 square inch. A light,

projected through the rubber, was the stimulus. The average distance between responding and the stimulus was less than .5 inch whether the stimulus marked the only reinforced location or whether all locations were reinforced and the stimulus was irrelevant. When the stimulus marked the only unreinforced location or when responding to it was both unreinforced and punished by "time-out," the average distance increased to about 4 inches. It was shown that about 4 inches would be the average distance if responding were totally independent of the stimulus.

- 9:40. A system for processing behavioral data by digital computer. FRANCIS MECHNER, JULIUS Z. KNAPP, AND EDWARD WOLF, *Schering Corporation*.

This system was designed and built collaboratively by Digitronics Corporation and the Schering Corporation laboratory staff. The main purposes of the system are: to record the data from up to 20 concurrent experiments in a form suitable for direct processing by a digital computer, to record the magnitude (force or velocity) of the individual responses in such a way that the record can be directly handled by the computer, and to permit reanalysis of the data of any experiment after the results of the first analysis have been examined.

- 9:50. Discriminative properties of punishment. WILLIAM C. HOLZ AND NATHAN H. AZRIN, *Anna State Hospital, Illinois*.

Punishment in the form of electric shock was delivered to pigeons only during periods of food reinforcement. During periods of extinction, no punishment was delivered. Under these conditions the punishment acquired discriminative properties so that punishment during extinction paradoxically served to increase responding. These findings suggest a possible artifact in experiments where punishment is applied during extinction.

- 10:00. Adaptation to aversive stimulation. NATHAN H. AZRIN, *Anna State Hospital, Illinois*.

Rats were first conditioned to respond to avoid electric shocks. When prior exposure to unavoidable shocks was given, the result was an increase rather than a decrease of responding. No "adaptation" to shock resulted from this prior exposure.

- 10:10. The effect of punishment by time-out from positive reinforcement on a complex discrimination. JAMES B. APPEL AND CHARLES B. FERSTER, *Indiana University Medical Center*.

Two pigeons were trained to match a sample color appearing on the center key of a three-key Skinner

box by responding to the corresponding color on one of the two side keys. The accuracy of discrimination was studied as a function of the schedule of reinforcement for correct matches and the amount of punishment by a time-out following incorrect matches. It was found that continuous reinforcement does not lead to accurate matching regardless of the duration of punishment, whereas the pigeon's discriminatory behavior is a function of the length of the time-out when correct responses are reinforced on a variable interval schedule.

- 10:20. The generalization of fear-produced suppression. MORTON FLESHLER AND HOWARD S. HOFFMAN, *Pennsylvania State University*.

Pigeons pecking for food on a variable interval schedule were periodically presented with a 40-second tone followed by unavoidable shock. When the presentation of tone caused stable, complete suppression, shock was discontinued and tones, having frequencies above, below, and including that of the training tone, were presented. At first suppression generalized broadly; but, with continued tests, the gradient narrowed until only the training tone caused suppression. A second portion of the study revealed that the degree to which the fear-produced suppression generalizes decreases as motivation for the positively reinforced ongoing behavior increases.

### Division 3. Human Learning

- 9:00-9:50. Hollywood Room, Morrison

CLYDE NOBLE, *Montana State University*, Chairman

- 9:00. The effect of set on serial learning of isolated materials. JOHN F. WING, *Antioch College*. (Sponsor, Harry J. Jerison)

It has been shown that grouping of nonsense syllables into sublists by differential typographic emphasis results in superior learning than when the same syllables are presented as a homogeneous list. The present experiment determined independently the effect of subjects' set (as manipulated by experimental instructions) from the effect of objective grouping of the materials. It was found that only the subjects learning the grouped list who had also received a set to learn several lists simultaneously were significantly superior to those learning the homogeneous list. The results establish set as one of the variables upon which superior learning of isolated materials is dependent.

- 9:10. Habit strength and intralist interference in identification learning. ERNST Z. ROTHKOPF, *Bell Telephone Laboratories*.

Theoretical attempts to bring paired-associate learning into the same conceptual framework as classical or instrumental conditioning have equated intralist interference (substitution errors) with stimulus generalization. This view implies, contrary to the conventional "law of practice," that under certain conditions increased practice with one of the paired associates relative to amounts of practice with the remaining items of the list should result in increased intralist interference. This implication was tested in a minimal identification learning situation and confirmed. The data also show that, for early stages of practice, the difference in interfering effects which two items have upon each other is a function of the difference in amount of practice with each of the two interfering items and does not appear to be related to absolute level of practice.

- 9:20. The utilization of previous learning by human subjects in an ambiguous cue situation. GEORGE McBEE AND JACKSON B. REID, *University of Texas*.

The purpose was to determine the effect of prior learning experiences with certain stimulus dimensions in a situation involving the same stimulus properties, but under new and ambiguous reward circumstances. Opposing theoretical positions involved generated predictions of different responses. Although cognitive and stimulus response theory were both found to be congruent with some of the findings, neither theory offered a total explanation of them. To clarify the implications of these results, possibilities for extension of the design in terms of the degree of training are suggested, with inclusion of conditions appropriate to the testing of certain continuity and non-continuity hypotheses.

- 9:30. A comparison of visual and kinesthetic presentation of stimuli in a running memory task. BRUCE M. ROSS AND NISSIM LEVY, *Rutgers University and University of Portland*.

What is the relative efficiency of the visual as compared with the kinesthetic mode when the subject is faced with a running memory task which involves backward comparisons? Despite very large within-group variability, quite clear and statistically reliable differences were found in mean number of errors attributable to the specific set variable. The difference between the two modes of presentation was not statistically reliable. However, there was a significant interaction between the rate of learning shown by subjects and the sense modality used.

## Division 5. Psychometric Procedures I

9:00-10:50. Crystal Room, Sherman

ROGER LENNON, *World Book Company*, Chairman

- 9:00. An experimental derivation of the optimal scoring formula for a highly speeded clerical aptitude test. WILLIAM B. MICHAEL, ROGER STEWART, BRUCE DOUGLASS, AND J. H. RAINWATER, *Los Angeles County Civil Service Commission*.

To determine the optimal type of scoring formula for a highly speeded clerical aptitude test of homogeneous two-choice items when varied instructions are given examinees concerning the advisability to guess, two different experimental designs were employed for two samples of 180 and 300 male Marine Corps recruits. From a study of net changes in mean scores and of correlational data associated with various scoring formulas, it was concluded that scoring procedures embodying a minimal subtraction for wrong answers such as  $R - W/4$ , rather than  $R - W$ , should be employed in order to retain high reliability and to minimize the inclination to guess wildly.

- 9:12. Biserial bias when variables are restricted in several ways. CECIL D. JOHNSON, *Personnel Research Branch, Department of the Army*.

Formulae which relate the correlation of two variables in a parent population with biserial correlation coefficients computed on corresponding subpopulations restricted in various ways are furnished and discussed. The following situations are considered: (a) The removal of the center from, and (b) the truncation of the underlying distribution of the dichotomized variable, and (c) the truncation of the distribution of the continuous variable. The first situation includes the widespread criterion model, and the latter is the more common selection problem where dichotomous criterion scores are missing for those not selected.

- 9:24. A theoretical classification index: A criterion for "value" problems in personnel research. WARREN R. GRAHAM, *Personnel Research Branch, Department of the Army*.

A value criterion index for classification purposes is proposed in terms of theoretical considerations demanded by conditions of measurement and classification. These include a hypothetical standard output metric ( $A$ ), equating for differences of time-on-job ( $T$ ), and weighting for differential value of various outputs ( $V$ ). Since classification requires predictions

( $A'$  and  $T'$ ), the theoretical predicted Classification Index ( $C'$ ) is:

$$C' = \frac{T_s VA'}{T'}$$

where  $T_s$  is a constant period of time. Most estimates of standard output are likely to be based on ratings ( $y$ ) which are measures of output-per-unit-time (for "average," "usual," or "typical" performance. Thus a rating may be represented as  $y = A_y/t$ , where  $t$  is the time covered by the rating. Solving for the standard output based on rating ( $A_y$ ), we get:  $A_y = yt$ . Since  $A_y$  must be predicted we write:  $A_y' = (yt)'$  and substitute this into the equation for the predicted Classification Index:

$$C' = (T_s) \frac{VA'}{T'} \cong (T_s) \frac{V(yt)'}{t'}$$

This approximation formula represents the comparable contribution of one rated man in one occupation, based on the period of rating ( $t'$ ), if all ratings are from the same instrument.

9:36. An evaluation of the "not-reached" response as a pseudodistracter. CHARLES T. MYERS, *Educational Testing Service*.

An item analysis statistic,  $e_{it}$ , is described such that the sum of the  $e_{it}$  indices equals the standard deviation of the test and the  $e$  indices for all distracters, "omit" responses, and "not-reached" responses equals the negative of the  $e_{it}$  index for an item. This suggests a method of evaluating the appropriateness, or usefulness, of the not-reached responses which may lead to an evaluation of the appropriateness of the number of items with respect to the time limit of the test.

9:48. One large sample or two smaller samples?

J. J. MELLINGER, *Personnel Research Branch, Department of the Army*.

In selecting items from a pool on the basis of item validities, one can either compute the validity of each item upon a single large sample or one can first split the large sample into two smaller and independent samples and then compute two validities for each item. Using the second design one can require that an item have significant validities in both samples before it is finally accepted. Some examples are given which indicate, if the overall level of significance is held constant for the two designs, that the large sample design is more powerful.

10:00. Sample bias by eliminating incomplete answer sheets. ALAN A. ANDERSON, *Personnel Research Branch, Department of the Army*. (Sponsor, Wilfred A. Gibson)

One hundred low-level examinees who omitted between 12 and 142 items (with an average of 48 items) at the end of a 300-item spiral omnibus test (vocabulary, arithmetic reasoning, tool functions, and spatial relations) had the same average total test score with 100 matching examinees who omitted no more than 5 items at the end of the test. Removing incomplete answer sheets would not have affected the total test score. However, findings for differences with respect to subtest scores may reflect a difference in approach to test-taking and have implications for both differential classification and selection.

10:12. An empirical test of the Tukey-Cureton method for smoothing frequency distributions. RICHARD W. WATKINS AND WILLIAM H. ANGOFF, *Educational Testing Service*.

An analytic method for smoothing frequency distributions developed by Tukey and Cureton was tested using two sets of ten 500-case samples drawn at random from two populations of 5,000 cases. The deviations of the smoothed frequencies from the population frequencies were smaller than the deviations of the unsmoothed frequencies, but the means and variances of the first four moments and the variances of the percentiles were essentially the same for the smoothed and unsmoothed distributions. This method of smoothing is effective in reducing the sampling error of frequencies, but it does not reduce the sampling error of percentiles.

10:24. Configural scoring vs. single response scoring. BENNO G. FRICKE AND ARNOLD H. MATLIN, *University of Michigan*.

Personality scales based on the simultaneous scoring of three responses provided substantially higher validity coefficients in each of the seven areas where such configural scales were compared with scales based on single response scoring (i.e., true-false responses). However, when small samples (i.e., less than 100 cases in each criterion group) were used for item analysis and scale construction, the configural scales were generally inferior. When moderate sized samples (i.e., about 300 in each criterion group) were used, no consistent differences in validity were apparent.

#### Divisions 5 and 12. Symposium: Measuring Changes in Self-Concept

9:00-10:50. The Assembly, Sherman

O. HOBART MOWRER, *University of Illinois*, Chairman



**Participants:**

RUTH C. WYLIE, *Sarah Lawrence College*. Construct validity in self-concept measurement.

JOHN M. BUTLER, *University of Chicago*. Measuring changes in self-concepts over psychotherapy.

RAYMOND B. CATTELL, *University of Illinois*. Measuring changes in self-sentiment strength and conceptual content.

Discussant: ROSALIND D. CARTWRIGHT, *University of Chicago*.

**Division 9. Symposium: Uses and Abuses of Psychological Tests**

9:00-10:50. Louis XVI Room, Sherman

KENNETH B. CLARK, *City College of New York*,  
Chairman

Participants: OTTO KLINEBERG, *Columbia University*; ANNE ANASTASI, *Fordham University*; AND JOSHUA FISHMAN, *University of Pennsylvania*.

Discussant: KENNETH B. CLARK, *City College of New York*.

**Division 10. Symposium: Personality Expression and Art**

9:00-10:50. Bal Tabarin, Sherman

SOLOMON E. ASCH, *Institute for Advanced Study, Princeton, New Jersey*, Chairman

**Participants:**

IRVIN L. CHILD, *Yale University*. Esthetic judgment and esthetic preference.

ROBERT H. KNAPP, *Wesleyan University*. Personality correlates of esthetic preference.

MICHAEL A. WALLACH, *Massachusetts Institute of Technology*. Motive expression through listening to music.

**Division 12. Variables Related to Psychiatric Status**

9:00-10:50. Old Chicago Room, Sherman

C. LELAND WINDER, *Stanford University*, Chairman

9:00. Social competence and symptomatic behaviors.

EDWARD ZIGLER AND LESLIE PHILLIPS, *Yale University and Worcester State Hospital*.

In a sample of 1,053 patients, the following hypotheses were tested and verified: (a) Hospitalized individuals who manifest those symptoms indicative of "turning against the self" would have a higher level of premorbid competence than individuals manifesting symptoms indicative of either an "avoidance of others" or "self-indulgence and turning against others." (b) Since hospitalized females were found to have a higher level of premorbid social competence than hospitalized males, females should more frequently manifest symptoms indicative of "self-deprivation and turning against the self."

festing symptoms indicative of either an "avoidance of others" or "self-indulgence and turning against others." (b) Since hospitalized females were found to have a higher level of premorbid social competence than hospitalized males, females should more frequently manifest symptoms indicative of "self-deprivation and turning against the self."

9:10. Relation of achievement and success need strength to drive level in psychiatric patients.

ROBERT E. FAGER AND VINTON ROWLEY, *State University of New York Upstate Medical Center in Syracuse and State University of Iowa College of Medicine*.

This study investigates the relation between the strength of achievement and success needs and drive level in hospitalized psychiatric patients. High and low strength need groups were identified by means of the Edwards Personal Preference Schedule. Drive levels were inferred from the Welsh Anxiety Index and a visual-spatial stimulus generalization task. Results indicate that subjects with high need strength in achievement and success have higher anxiety indices ( $p < .01$ ) and generalize more ( $p < .001$ ) than subjects with low need strength. Findings are interpreted to reflect differences in drive level as a function of need salience.

9:20. The basal process in galvanic skin resistance for normal and psychiatric individuals.

JEROME I. BERLIN AND EUGENE T. GENDLIN, *University of Wisconsin*.

Skin resistance was measured in normals and psychiatric inpatients for 15 minutes while they were alone and assured that nothing would happen. Psychiatric patients exhibited significantly more small amplitude reversals in direction. Levels remained significantly lower. Normals reached high resistances, exhibited fewer reversals, but these were large amplitude changes recurring throughout the period. This recurrent pattern has methodological implications for concepts of basal levels and accommodation. Predictions arose from an earlier study associating "continuous internal focusing on experiencing" with linear GSR increase. Greater incidence of this pattern in normals implies greater capacity for such a psychological process under the given conditions.

9:30. The relationship between type of humor found amusing by psychiatric patients and overt behavior.

LEONARD P. ULLMANN, *VA Hospital, Palo Alto, California*.

Previous research found a positive relationship between ratings by ward personnel of patients' overt hostile behavior and the evaluation by these patients

of the relative funniness of cartoons with hostile and nonhostile themes. The present research replicated this finding using clinical records (historical, interview, and observational material) instead of ratings and using cartoons with sexual as well as aggressive themes. The results supported the idea that what is judged amusing is more likely associated with typical overt behavior and a function of drive and habit strength than it is associated with and a function of repressed impulses.

9:40. Objectivity in the assessment of the thyrotoxic patient. DAVID B. VINSON AND LEONARD R. ROBBINS, *University of Texas Postgraduate School of Medicine*.

Objective measurements of the emotional responses associated with thyrotoxicosis are compared with those of normals and other groups, and effect of treatment observed. A description of techniques used and an analysis of the data are presented. The performance on certain objective psychological techniques of untreated thyrotoxic patients appears to be significantly different from that of normal controls, patients with somatization and obsessive-compulsive reactions, and schizophrenics, but strongly similar to that of patients with organic, structural changes in the brain. The adequately treated thyrotoxic patient closely resembles the essentially normal individual who tends, under stress, to internalize conflicts and frustrations.

9:50. Relationship between the accuracy of time estimation and the efficiency of ego functioning. WAN-HO CHAO LEE, *Northwestern University*.

This study tests the hypothesis that the accuracy of time estimation is related to the efficiency of ego functioning. Self-ratings of ego-strength and anxiety were used as subjective criteria, while the grouping of subjects as normals or hospitalized neurotics was used as the objective criterion of the efficiency of ego functioning. A new reliable accuracy index of time estimation was devised and was found to be significantly related to two scores of Tritt-Stein scales of ego-strength and anxiety. These positive results were supported by the significant group differences in time estimation. The hypothesis was established.

10:00. A standardized twenty alternate form word association test for measurement of daily change in psychiatric condition. L. J. MORAN, R. B. MEFFERD, JR., AND J. P. KIMBLE, JR., *VA Hospital, Houston, Texas*.

In studies that attempt to establish correlates of mental illness, typically the least reliable variable is

the criterion variable itself: change in psychiatric condition. A word association measure, with 20 empirically equated alternate forms, has proven reliable for the objective, quantitative assessment of daily change in psychiatric condition. Equating of alternate forms was based in part upon responses of 5,500 normal subjects; further equating and validation as a measure of daily change in psychiatric condition was based upon 90 normal and 160 schizophrenic subjects. In addition, data are presented on 13 schizophrenics tested daily for 4 to 8 months in interdisciplinary studies.

10:10. Personality and intellectual changes in psychiatric patients following brief partial sensory deprivation. HENRY B. ADAMS, RICHARD N. CARRERA, G. DAVID COOPER, ROBERT G. GIBBY, AND HERBERT R. TOBEY, *VA Hospital, Richmond, Virginia*.

Thirty hospitalized white male veteran psychiatric patients exposed to brief partial sensory and social deprivation were intensively studied before, during, and after the experience. Behavioral ratings of overt symptomatology and Rorschach measures of ego strength showed significant improvement following deprivation. Intellectual functioning improved greatly, WAIS IQ scores increasing an average of seven points. Degree of symptomatic improvement could be predicted (multiple  $R = .82$ ) from the combination of three MMPI Scales (*Hy*, *Ma*, and *R*) and ratings of predeprivation symptomatology. Level of overt anxiety during deprivation was significantly related to six MMPI scales reflecting various aspects of adequacy of ego functioning.

#### Divisions 12 and 17. Symposium: The Relation of Psychology to Family Relations and Marriage Counseling

9:00-10:50. Constitution Room, Morrison

STARKE R. HATHAWAY, *University of Minnesota Medical School*, Chairman

Participants: J. A. MORRIS KIMBER, *Whittier Psychological and Marriage Counseling Center, California*; HOWARD E. MITCHELL, *Marriage Council of Philadelphia*; AND ROBERT A. HARPER, *Washington, D. C.*

#### Division 14. Contributed Papers I

9:00-9:50. Gold Room, Sherman

LESTER GUEST, *Pennsylvania State University*, Chairman

9:00. The roles of consumer and psychology in consumer-psychology. ROBERT PERLOFF, *Purdue University*.

A group of psychologists has been raising a number of questions about consumer research and consumer psychology, including the quality and utility of this research, and the psychologist's role in this activity. This paper will suggest tentative answers to these questions, describing an emerging core of instruction and research in consumer psychology, embodying intradisciplinary, interdisciplinary, and internship considerations. The cornerstone of this examination of, and preparation of, doctorally trained psychologists for consumer psychology is the consumer *qua* consumer, not the consumer as an individual susceptible to the persuasions and manipulations of others.

9:25. The effect of color on black-and-white ads. BENJAMIN WRIGHT AND BURLEIGH B. GARDNER, *University of Chicago and Social Research, Inc.*

A semantic differential was used to measure the connotative meaning of red, blue, yellow, and black-and-white ads with these colors added to them singly. Respondents were middle majority Chicago men. Red was rated most stimulating, blue most agreeable, and yellow more stimulating than blue but no more agreeable than red. Red, the color farthest from the ads in meaning, changed them the most, increasing stimulus value and producing a degree of agreeableness exceeding that of either red or ad alone. Blue and yellow made less difference and were less predictable, sometimes increasing stimulus value, sometimes decreasing agreeableness.

9:35. The effect of varying degrees of familiarity with the stimuli on evaluative judgments. JOSEPH M. MADDEN, *Personnel Laboratory, Wright Air Development Division*.

The formation of the absolute scale—a subjective scale which bears close correspondence to the physical series—has been demonstrated with a variety of stimuli. When dealing with value judgments, such as those obtained in a job evaluation system, the degree of familiarity of each subject with each job in the group being judged is likely to vary. If this variation affects the values taken by the absolute scale, and therefore the judgments given, familiarity becomes a variable which requires control in the job evaluation program. In order to obtain judgments for each of five jobs from subjects representing the full range of familiarity, Air Force officers rated all 5 jobs. Using a multiple regression analysis, it was found that the familiarity effect was constant from job to

job: the higher the degree of familiarity, the higher the rating given for 5 of the 14 rating factors used.

## Division 21. Engineering Psychology I

9:00-9:50. Embassy Room, Morrison

EDMUND T. KLEMMER, *International Business Machines Corporation*, Chairman

9:00. An investigation of the human element in the diagnostic analysis of complex electronic equipment. HOWARD J. PAGE, *IBM General Products Division, Endicott, New York*.

Diagnostic analysis of a data processing machine or system represents complex human problem solving behavior. Such behavior is a most significant, and probably the most complex, man-machine interaction. This paper analytically identifies human problems in computer servicing and diagnosing, then separates them from engineering problems. Examples of human problem areas are described. These include understanding how the machine works, correctly interpreting diagnostic indicators, asking appropriate questions about the malfunction, and devising definitive tests. Areas of application for these data are described, including defining the needs of diagnostic personnel, developing criteria for diagnostic analysis, and selecting and educating diagnostic personnel.

9:10. A systematic method for analyzing and evaluating checkout problems. R. L. JAY, *Douglas Aircraft Company, Santa Monica, California*.

Although this paper uses a puzzle as an illustrative problem, by changing the word "marbles" to resistance, capacitance, voltage, hydraulic pressure, etc., immediate practical applications may be made. The contingency method of checkout is preferred to the predetermined method when the work is to be performed manually or when the number of tests is reasonably small, e.g., less than 12. The predetermined method appears to become increasingly valuable as the number of tests becomes large. In addition, as complexity and redundancy increase, a self-checking capability appears to be desirable in place of separate test equipment.

9:20. Random walk monitoring. W. E. SMITH AND R. M. HALSEY, *International Business Machines Corporation, Kingston, New York*.

The "Random Walk" monitoring program was developed to investigate the effects on performance of a quantized monitoring task, in which system parameters such as information change rate, feedback rate, and rate at which responses may be made can be

varied. This program was written for a digital computer with extensive display and manual input capabilities. It provides a task wherein multiple moving targets require corrective actions at a rate approximately described by a Poisson distribution.

- 9:30. Electronics and the thinking process. GILBERT B. ROZRAN, *Burroughs Corporation Research Center, Paoli, Pennsylvania.*

An analogy is drawn between the principles of electronic circuits and their components and the nervous system and its cells. The similarity stressed is primarily one of function rather than of direct physical configuration. Some physiological evidence is offered to explain the nerve impulse and to point out its basic difference from an electrical impulse in terms of its source of energy. The conclusion stresses the interaction of the sensors, the central nervous system, and the effectors in the functioning of the thinking process with the integrating aid of the feedback circuits.

### Division 3. Verbal Learning

10:00-11:50. Hollywood Room, Morrison

JACK RICHARDSON, *Harpur College, Chairman*

- 10:00. Re-examination of the serial position effect. MURRAY GLANZER AND STANLEY PETERS, *Walter Reed Army Institute of Research and University of Illinois.*

Rote learning involves a cycle: words series, gap, words series, gap, etc. Two experiments were carried out to determine the effects of two characteristics of the gap upon the serial position curve: interval of spacing or rest, break in the associative chain. Experiment I gave evidence that increasing the spacing increased systematically the peakedness of the curve. Experiment II, varying both spacing and associative chaining at the gap, clearly demonstrated that spacing has the systematic effect found in Experiment I. Associative chaining had a significant, but complex effect on the curve. The results are related to several explanations of serial position effects.

- 10:10. Proactive inhibition as a function of the method of reproduction. JOHN L. WIFF, *University of Florida.* (Sponsor, Wilse B. Webb)

The problem investigated was whether proactive inhibition would occur as a function of the method of presenting material to be learned and of the method of testing recall. The subjects were required to learn, free recall, and relearn a different list of ten adjectives

on each of four successive days. A five-hour retention interval was used. Significant differences were found among recall means over days. Differences among learning means were also significant. The former differences were an inhibitory effect (proactive inhibition), and the latter differences were a facilitory effect (proactive facilitation). These results are interpreted as supporting Underwood's hypotheses concerning proactive inhibition.

- 10:20. Word-association intrusions in recognition memory. RICHARD O. ROUSE AND FRED SCHWARTZ, *Williams College and Austen Riggs Center.*

To determine whether word associates can act as extra-list intrusions, subjects heard a serial list of 35 Kent-Rosanoff stimulus words five times and were given five immediate tests of recognition, using forms on which the correct words were each printed on a line with four of their associates. Frequency of erroneous choices was a direct monotonic function of the Minnesota association frequency norms. Blanks increased, correct choices decreased, and erroneous choices showed no trend from the beginning to the end of the list. Activation of the associates of the correct response can be a source of error in learning.

- 10:30. The effect of spacing repetitions on short-term retention. LLOYD R. PETERSON AND MARGARET JEAN PETERSON, *Indiana University.*

A distribution of practice study was carried out at a simpler level of analysis than is customary in verbal learning. Short-term retention of nonsense syllables presented twice was found to be directly related to the length of the interval separating the presentations. Intervals up to 11 sec. in duration were used. Counting activity filled the intervals. Analysis showed the distribution effect was not related to serial learning within the item. It was related to the nonserial learning indexed by frequency of recall of initial letters. The results are a confirmation of predictions from Estes' stimulus fluctuation model.

- 10:40. Stimulus characteristics and percentage of occurrence of response members as factors in paired-associates learning. CALVIN F. NODINE, ALBERT E. GOSS, BRUCE N. GREGORY, HARVEY A. TAUB, AND KIERAN E. KENNEDY, *University of Massachusetts.*

The first two of three experiments investigated paired-associates learning as a function of orthogonal combinations of similarity and association values of both stimulus and response members and of percentage of occurrence of response members. Added in a



third experiment were prior familiarization with the stimuli or warm up, and amount of such experiences. Rate of acquisition was directly related to association values of both stimulus and response members and percentage of occurrence of response members, and inversely related to similarity of both stimulus and response members. Neither prior familiarization nor amount of such experience had significant effects.

10:50. Paired associates under two training conditions and different numbers of response alternatives. GORDON H. BOWER, *Stanford University*. (Sponsor, Robert R. Sears)

A statistical learning model is presented to account for the effect on paired-associate learning of different numbers of response alternatives under correction and noncorrection training conditions. The hypothesis tested and confirmed is that the learning effect of reinforcing a response is basically identical in both training conditions and is independent of the number of response alternatives. An auxiliary assumption that was confirmed is that the probability of a correct response is unaffected when subjects respond incorrectly and are told "wrong." Employing these assumptions and correcting for the effect of number of response alternatives on guessing, the model adequately reproduces the data from four different groups using the learning rate constant estimated from one of these groups.

11:00. The effect of recency and recall on word association. SYDNEY J. SEGAL AND CHARLES N. COFER, *New York University*.

This study replicated and extended to incidental learning Storms' finding that the frequency of low-strength responses to an association test are significantly increased after these responses are read to subjects under recall instructions. This phenomenon was here termed priming. Results: Storms' findings are confirmed. The same degree of priming occurs if subjects are exposed to the list without recall instructions. Words recalled by the subjects, either before or after the association test, had a greater priming effect than words not recalled. The priming effect was greater with pairs of a higher R-S frequency. The priming effect appears to vanish rapidly in time.

11:10. Effects of experimentally-produced meaningfulness ( $m$ ) on paired-associate learning. GEORGE V. C. PARKER AND CLYDE E. NOBLE, *Montana State University*.

Previous experiments indicate that meaningfulness ( $m$ ) facilitates verbal learning, where  $m$  is a norma-

tive, response-defined attribute of the material. The present study manipulated meaningfulness experimentally by teaching 20 subjects 0, 3, 6, or 9 arbitrary associations to paralog. Supporting the hypothesis that number of associations is a primary factor in meaningfulness, paired associates were acquired significantly more easily ( $p < .01$ ) the higher the  $m$ -value of the response term. Amount of facilitation increased as a negatively accelerated function of induced meaningfulness.

11:20. Test of a "common sense" theory of the von Restorff effect. ELI SALTZ AND SLATER E. NEWMAN, *Wayne State University and North Carolina State College*.

A "common sense" theory for the von Restorff effect states that the effect occurs because the subject "notices" that one item in the list is different from the rest. There was no evidence to suggest that the von Restorff effect is an all-or-none phenomenon. Subjects learned serial lists in which the middle item was 0, 1, or 2 degrees of isolation from the rest of the list. The intermediate item was learned at a rate between that of the other two items. Analysis of the intermediate isolation data gave no indication that some subjects were sensitive to the isolation manipulation, while others were not.

#### Divisions 3 and 21. Symposium: Reaction Time, Decision Time, and Information Theory

10:00-11:50. Embassy Room, Morrison

ROBERT SEIBEL, *IBM Research Center*, Chairman

#### Participants:

G. H. MOWBRAY, *Johns Hopkins University*. Is human choice reaction time a constant?

R. DUNCAN LUCE, *University of Pennsylvania*. Response latencies and probabilities.

WILLIAM J. MCGILL, *Columbia University*. Signal detection and reaction time.

ROBERT SEIBEL, *IBM Research Center*. Some factors influencing choice reaction time.

PAUL M. FITTS, *University of Michigan*. Cognitive aspects of information processing.

Discussants: E. T. KLEMMER, *IBM Research Center*; AND R. J. AUDLEY, *University College, London*.

#### Division 14. Contributed Papers II

10:00-10:50. Gold Room, Sherman

PATRICIA SMITH, *Cornell University*, Chairman

10:00. Salary growth as a measure of career progress. THOMAS L. HILTON AND WILLIAM R. DILL, *Carnegie Institute of Technology*.

To obtain a criterion salary measure which would be independent of number of years of employment and independent of the absolute level of the general salary scale within different industries and different professional groups, the authors computed the annual rate of growth of the salaries of 453 men who graduated from an eastern college in the 1948-58 period. The growth rate, which was obtained by means of a conventional formula for compound interest rate, was found to be independent of years of employment and also year of first employment. Other correlates and problems are discussed.

10:10. The "It's your business" approach to ratings. WILLIAM H. WARD, *Department of Defense*.

An application of a role-playing technique to personnel performance evaluation is described in detail. Raters were placed in an hypothetical situation and provided with a realistic and uniform frame of reference. The method was applied in a situation requiring a comparable measure of performance for employees in markedly different types of work, located in different offices, working for different supervisors, and where measurement of a work product was impossible to obtain. The method appears to furnish a reliable and realistic criterion measure and should be generally applicable in situations characterized by most of the major obstacles encountered when dealing with supervisory judgments.

10:20. Performance dimensions of multiple-line insurance agents. DARRELL E. ROACH, *Nationwide Insurance*.

In order to develop criteria of performance for multiple-line insurance agents, 33 objective performance and 3 control variables were subjected to a factor analysis by the Wherry extended method. Thirteen factors emerged from the analysis yielding a hierarchical factor structure of a general factor, three subgeneral factors, and nine group factors. The factors were identified as follows: General sales performance; Property lines sales performance; Auto insurance: new production and volume in force; Fire insurance: new production and volume in force; Miscellaneous insurance: new production and volume in force; Personal lines production; Accident and sickness volume in force; Life insurance production; Volume in force (older agent pattern); Auto and fire insurance volume in force (older agent pattern); Life insurance volume in force (older agent pattern); Maintaining property lines persistency; and Writing marginal auto and fire insurance risks.

10:30. Effect of job experience and organization on the rating of tasks. FRANCIS D. HARDING AND DAVID A. NAURATH, *Personnel Laboratory, Wright Air Development Division*.

The use of a card sorting procedure for Air Force job incumbents to rate work tasks on such dimensions as Frequency, Importance, Difficulty, and Like-Dislike was investigated. Also, the effect of length of work experience and organization to which assigned was determined. The results indicated that, while reliable ratings could be obtained, the level of consistency was higher for certain dimensions than for others. The organization to which assigned significantly affects the level of rating given to tasks on all the dimensions. The length of experience affected only certain dimensions such as Frequency, Effort, and Technical Knowledge.

### Division 3. Discussion: Brain Activity and Behavior

11:00-11:50. Promenade Room, Morrison

ARTHUR J. RIOPELLE, *Yerkes Laboratories of Primate Biology*, Chairman

An open invitation to attend and contribute.

### Divisions 8 and 9. Symposium: Recent Advances in Cross-Cultural Research

11:00-12:50. Louis XVI Room, Sherman

EUGENE JACOBSON, *Michigan State University*, Chairman

#### Participants:

HAROLD H. ANDERSON, *Michigan State University*. Children's values in Western Europe and the Americas.

ANGUS CAMPBELL, *University of Michigan*. Election studies in Europe and the United States.

WAYNE H. HOLTZMAN, *University of Texas*. Culture in transition: Studies in Mexico and the United States.

BRADFORD B. HUDSON, *Rice Institute*. Culture and personality in the Middle East and the United States.

Discussant: OTTO KLINEBERG, *Columbia University*.

### Divisions 9 and 14. Symposium: Mental Health in Industry: Current Research Approaches

11:00-12:50. Bal Tabarin, Sherman

ARTHUR KORNHAUSER, *Wayne State University*, Chairman

## Participants:

- JOHN R. P. FRENCH, JR., *University of Michigan*.  
The effects of the industrial environment on mental health: A theoretical approach.
- HARRY LEVINSON, *Menninger Foundation*. Work and mental health: Processes and problems.
- ROBERT REIFF, *Jewish Board of Guardians*. Mental health research programs for labor organizations.
- ARTHUR KORNHAUSER, *Wayne State University*.  
Toward an assessment of mental health of factory workers: A Detroit study.

## Division 10. Studies in Esthetics

11:00-12:50. Emerald Room, Sherman

ELIOT H. RODNICK, *Duke University*, Chairman

- 11:00. The childhood story preferences of adolescent Finnish girls. MARY JEFFERY COLLIER AND EUGENE L. GAIER, *University of Western Ontario and University of Buffalo*.

Asked to summarize their favorite childhood story, 380 presumably adolescent Finnish girls usually named a fairy tale, especially Snow White and the Seven Dwarfs, Little Red Riding Hood, Cinderella, or Sleeping Beauty. Their answers to a questionnaire suggested that the stories were encountered first in the oedipal years and were preferred chiefly because their themes provided for the vicarious expression of characteristically oedipal-stage feelings and their happy resolution. The results are discussed in the light of pertinent hypotheses by Peller and others and of the previous empirical findings of Bruhn and of the writers.

- 11:25. The connotative meaning of color. BENJAMIN WRIGHT AND LEE RAINWATER, *University of Chicago and Social Research, Inc.*

This study confirms and extends the work of Pressey, Guilford, and Osgood on the connotative meaning of color. Judgments of 50 colors were obtained on 48 polar adjective pairs from West German adults. A raw score principal component analysis of the resulting  $48 \times 50$  matrix of average ratings identified four major dimensions of connotative meaning: happiness, strength, warmth, and elegance. Increasing chroma was found to increase the happiness, strength, warmth, and elegance of a color. Increasing value increased the happiness but decreased the strength. Increasing redness increased warmth and possibly strength.

- 11:50. Dimensions and personality correlates of abstract design preferences. CLIFFORD M. CHRISTENSEN, *University of Alberta*.

A Design Preference Inventory consisting of 177 pairs of abstract, nonrepresentational designs was constructed and administered to 231 high school and college students. Cluster analysis of item intercorrelations yielded 23 clusters which formed the basis for scoring keys. Low correlation coefficients were obtained between the cluster scores. This inventory's cluster scores were correlated with scores on the Edwards Personal Preference Schedule and the Minnesota Multiphasic Personality Inventory. Low correlation coefficients were obtained between the Design Preference Inventory and the structured personality tests.

- 12:15. Style and accuracy in esthetic judgment and judgment of others. GENE F. NAMECHE, A. H. MASLOW, AND RICARDO B. MORANT, *Brandeis University*.

The present paper reports two investigations of the relationships between accuracy in esthetic judgment and accuracy in judging others, and the relationship of styles of judgment (global or analytical) and accuracy in judging others. The measure of esthetic judgment was the Art Test (Maslow)—problem being to match artists' paintings. Subjects of the first investigations were 19 psychologists. Subjects of the second study were 24 members of a church group. Not accuracy, but style of esthetic judgment correlated with ability to judge others. Global subjects were the best judges. Other findings, assessment of the literature, and test meliorations are included.

## Division 12. Symposium: Private Practice in Clinical Psychology: A Serious Question of Values

11:00-12:50. The Assembly, Sherman

THEODORE H. BLAU, *Tampa, Florida*, Chairman

## Participants:

- MURRAY LEVINE, *Devereux Foundation*. Growth of interest and movement toward private practice roles by psychologists.
- ALBERT ELLIS, *New York City*. Private practice: A diminishing frontier in science and service.
- WILSE B. WEBB, *University of Florida*. Sow's ears from silk purses: Is private practice a desirable goal?

## Division 14. Contributed Papers III

11:00-11:50. Gold Room, Sherman

B. VON HALLER GILMER, *Carnegie Institute of Technology*, Chairman

- 11:00. Upgrading solution quality by the separation of two problem solving processes. ALLEN R. SOLEM, *University of Michigan*.

When persons are confronted with a problem for which there may be developed a variety of different solutions which differ in quality, forces toward a solution experience appear to be created which tend to inhibit sufficient exploration of the problem for development of a superior quality solution. The result is that inferior solutions frequently are settled for. By separating problem exploration processes from solution developing processes a significant increase in proportion of new and superior solutions was obtained.

- 11:10. A sociopsychological analysis of a safety system. RUFUS C. BROWNING, *The Adjutant General's Office, Department of the Army*.

In an industrial setting, a safety problem of considerable magnitude exists as a result of the highly toxic materials handled. Safety engineering has emphasized special procedures and mechanical devices, with less emphasis on human factors. A sociopsychological study was conducted in order to analyze the human factors in the safety system. Management was provided with guidance on needed areas of training, motivation, group functioning and social perceptions, and on modified plant procedures likely to produce an improved safety system. The study demonstrates the feasibility of using social science techniques to analyze subsystems of management.

- 11:20. A self-description adjective checklist as an indicator of behavioral modalities. MARVIN D. DUNNETTE AND WAYNE K. KIRCHNER, *University of Minnesota and Minnesota Mining and Manufacturing Company*.

The Adjective Checklist was developed in order to meet an industrial need for a short, easily administered, yet psychometrically sound measure of behavioral tendencies. It consists of 36 groups of five adjectives closely equated for over-all social desirability. Adjectives within quintads do, however, differ on dimensions of Activity and Potency. Six scales have been developed, tentatively labeled Assertiveness or Surgency, Cooperativeness, Conscientiousness, Stability, Imaginativeness, and Intelligence. Test-retest scale and item reliabilities are high (median scale reliability = .81). A number of validity studies and investigations of the checklist's fakability have been completed and are reported.

- 11:30. Development and cross-validation of retail and industrial sales keys on the Strong Vocational Interest Blank. WAYNE K. KIRCHNER AND MARVIN D. DUNNETTE, *Minnesota Mining and Manufacturing Company and University of Minnesota*.

Special Retail and Industrial Sales keys were developed on the Strong Vocational Interest Blank by grouping salesmen in terms of functional job duties and comparing Retail and Industrial group responses on Strong scales. The empirical keys that emerged were cross-validated on new groups of 258 salesmen with good results. Retail salesmen and Industrial salesmen scored higher on their respective keys, with mean score differences between groups significant at .01 level of probability. Scores on keys also correlated well with functional job description scores in various sales divisions.

#### Division 17. Contributed Papers IV

11:00-11:50. Parlor F, Morrison

DOROTHY M. CLENDENEN, *Psychological Corporation, New York, Chairman*

- 11:00. Occupational stereotypes as studied by the Semantic Differential. SHERIDAN P. MCCABE, *University of Portland*.

The Semantic Differential was selected for this investigation since the evaluative, potency, and activity factors would indicate the nature of the stereotype and the variance of the ratings would yield information on the specificity of the stereotype for the group of subjects used. The subjects were 94 seminarians in their third year of college, a group highly homogeneous with respect to their occupational interests and goals. The subjects rated ten occupations along with their self- and ideal self-concepts on the Semantic Differential. The nature and specificity of the resulting occupational stereotypes are discussed, with implications for psychology of occupations and further research.

- 11:10. A neo-Freudian look at occupational stereotypes. NORMAN ABELES AND JAMES F. MORSE, *Michigan State University*.

This study investigates the patterning of responses to selected occupational titles within the framework of Erich Fromm's character types. Three groups of subjects were asked to rate to what extent adjectives descriptive of Fromm's accepting, taking, preserving, and exchanging orientations were characteristic of three titles (advertising man, accountant, and social



worker). Results indicated that these titles could be differentiated with regard to response patterns. There was also evidence of a relationship between certain of the orientations and the subjects' perception of occupational titles. Finally, the consistency of the patterns gives support to theories emphasizing the importance of occupational stereotypes in the determination of vocational interests.

- 11:20. The interrelationships among social desirability, occupational prestige, and the Kuder Preference Record. EDWARD S. MARKS AND DONALD K. PUMROY, *University of Maryland*.

Prestige has been said to play a significant role in occupational choice. The relationship of prestige and occupational interest was obtained using subjects' prestige rankings of occupational areas, and scores on these areas on the Kuder Preference Record. There was a significant relationship between rankings and the Kuder scores for about one-fourth of the sample, indicating that for some people prestige is closely related to their occupational interests. The Edwards Social Desirability Scale did not discriminate those showing this high relationship from the other subjects, nor did it correlate significantly with any of the Kuder scales or with the prestige rankings.

- 11:30. Pattern analysis of the Strong Vocational Interest Blank for men. RICHARD R. STEPHENSON, *State University of Iowa*. (Sponsor, Leonard D. Goodstein)

Currently the most widely used method of pattern analyzing a Strong Vocational Interest Blank profile is the Darley and Hagenah method. Because of the subjectiveness of this method, certain classification difficulties necessarily arise whenever the method is employed. The major such difficulties are noted. Utilizing as a criterion the avoidance of these difficulties, and drawing upon the writings of several authors in addition to Darley and Hagenah, a modified pattern analysis technique is developed and proposed. The proposed method obviates each difficulty noted. Most importantly, the proposed method is completely objective. Advantages of an objective technique are briefly discussed.

#### Psi Chi. Invited Address

11:00-11:50. Grand Ballroom, Morrison

EDWIN G. BORING, *Harvard University*. Genesis of Modern Psychology.

#### MONDAY AFTERNOON, SEPTEMBER 5

##### Division 3. Visual Perception

12:00-12:50. Hollywood Room, Morrison

NORMAN GUTTMAN, *Duke University*, Chairman

- 12:00. Relations between contrast thresholds for "faded" and "unfaded" completely homogeneous visual fields, and stimuli of smaller areas. W. CRAWFORD CLARK, RONALD PICKETT, KENDAL PRICE, AND PERCIVAL TOMLINSON, *University of Michigan*.

If an observer continues to view a visual field which is completely homogeneous in intensity (Ganzfeld), its brightness will appear to diminish until the entire visual field is dark grey ("faded visual field"). The question arises: Is this phenomenal change related to a change in detection threshold? The results of this study demonstrated that the threshold for an increment of illumination in the "faded field" was the same as the threshold in the "unfaded field" and that the contrast threshold for the homogeneous visual field was identical to that of much smaller areas of stimulation. Thus, the visual system may cease responding to steady-state illumination without altering its sensitivity to a change in illumination.

- 12:10. The effect of target velocity in a frontal plane on binocular spatial localization at photopic retinal illuminance levels. ALFRED LIT, *Bendix Systems Division, Ann Arbor, Michigan*.

The magnitude of the localization error for depth setting of a black vertical rod which oscillates in a given frontal plane has been studied as a function of target velocity at each of three specified photopic levels of binocular retinal illuminance. Both target velocity and level of binocular retinal illuminance are shown to have systematic effects on spatial localization. These new data are discussed in relation to comparable data obtained in earlier experiments on depth settings for stationary targets and on depth settings for oscillating targets viewed under conditions of unequal binocular retinal illuminance (Pulfrich stereophenomenon).

- 12:20. Accuracy of visual perception as a function of stimulus complexity. GEORGE H. ZIMNY, *Marquette University*.

The study investigated the effect of complexity (number of elements) of stimulus material upon the accuracy of visual perception of the position, direction, and number of forms in the material. Slides of basketball situations (complex material) and of geo-

metric forms (simple material) were shown tachistoscopically. Each type of material contained three levels of complexity. The influence of complexity varied depending upon what the subjects were to perceive. Increased levels of complexity of both simple and complex material resulted in increased accuracy of perception of number but not of direction or position of forms.

- 12:30. Acquisition of perceptual responses as a function of target loading, location, and repetition. HARRY W. KARN AND LEE W. GREGG, *Carnegie Institute of Technology*.

One outcome of perceptual learning is the subject's ability to use redundant information so that minimum cues yield essentially correct interpretations of complex sensory data. This experiment defines a learnable cue, target loading, and poses a task that precludes the possibility of complete observation of the entire visual field. As a function of the opportunity to learn the nature of target loading, the rate and extent of improvement in perceptual response was observed for various locational configurations. Information about the modifications of initial attention and subsequent scanning is provided by the results of the experiment.

#### Division 5. Statistical Procedures

12:00-12:50. Jade Room, Sherman

BART G. OSBURN, *Southern Illinois University*,  
Chairman

- 12:00. A maximum likelihood method for comparing factor analyses. CHARLES E. HALL, *Walter V. Clarke Associates*. (Sponsor, Peter F. Merenda)

A method is developed whereby the factor coefficients developed for one population can be rotated and compared with the factor coefficients developed for another population if the same tests are used with both populations. This method maximizes Burt's index of factor comparability and permits an assumption of colinearity of factor scores between the two populations.

- 12:12. Identification of two-variable factors. ISAAH GUTTMAN AND LEONARD WOLLACK, *United States Naval Personnel Research Field Activity, Washington, D. C.*, and A. J. Wood Research Corporation, Philadelphia.

Unlike the usual concept of a factor as being defined by a minimum of three variables, a two-variable factor consists of the variance common to two variables. Correlation (i.e., loading) of an outside

variable with this factor is shown to be the part correlation

$$r_{0(12)} = \frac{r_{01}r_{02}}{r_{12}}$$

Variations of this procedure are possible, such as the correlation of an outside variable with the variance common to two variables after removal of the effects of a third variable from the two variables. This formula is

$$r_{0(12.3)} = \frac{\beta_{20.3}C_{10.3}}{r_{12.3}}$$

An example using the latter formulation is presented.

- 12:24. Multiple-partial correlation in motivation research. GEORGE DOUGLAS MAYO AND WINTON H. MANNING, *Naval Air Technical Training Command and Texas Christian University*.

Five variables which purport to measure motivation were evaluated, by means of multiple-partial correlation and related procedures, in terms of their relationship to overachievement-underachievement in two units of a basic course in maintenance and repair of aircraft structures. Previous overachievement-underachievement in a mechanical fundamentals course and peer ratings on effort with aptitude partialled out emerged as the two motivation measures most closely related to the criteria, the multiple-partial correlation coefficients being .67 and .41. Pictorial measures of achievement imagery, instructor's observations of student's classroom behavior, and self-ratings on effort expended (all with aptitude partialled out) bore low relationships to the criteria.

- 12:36. A model for multiresponse choice probability learning. SAMUEL GREENHOUSE, KENNETH B. LITTLE, YVONNE BRACKBILL, AND STEPHEN H. KASSEL, *National Institute of Mental Health and Johns Hopkins University*.

A formula is derived for predicting asymptotic response proportions in multichoice probability learning tasks. Predicted response proportions are a function of number of response alternatives, probability of occurrence of the appropriate stimulus, and the marginal utilities for the subject of making correct responses and of varying responses. Siegel's Model I for the two-choice situation is a special case of the more general form. Experimental evidence is presented indicating that values derived for the ratio of the two utilities in one learning task permit accurate predictions under certain restrictions of asymptotic response proportions in tasks that differ from the original in frequency of occurrence of the stimuli.

**Division 5 and Psychometric Society. Multidimensional Scaling**

12:00-12:50. Ruby Room, Sherman

JOHN MILHOLLAND, *University of Michigan*,  
Chairman12:00. The perceived structure of political relationships. SAMUEL MESSICK, *Educational Testing Service*.

The scaling method of multidimensional successive intervals was applied to judgments of similarity among 20 political figures in an attempt to ascertain the number and nature of relevant dimensions perceived in political relationships. The analysis was performed separately for 265 university students professing allegiance to the Democratic Party and 460 students aligned with the Republicans. Seven dimensions were found to be essentially identical for the two parties and appeared to represent such political-ideological orientations as foreign-domestic differences, McCarthyism, Republican-Democratic differences, and liberalism-conservatism. The role of consistent individual differences in the judgment of similarity was also considered as a means of uncovering differential perceptual structures.

12:12. Individual differences in multidimensional scaling. LEDYARD R. TUCKER AND SAMUEL MESSICK, *Educational Testing Service*.

Multidimensional scaling procedures when applied to average ratings across samples of subjects may mask consistent individual differences in judgments of similarity. An attempt was made to uncover different "points of view" about stimulus similarity and develop differential multidimensional structures. Forty subjects, selected from a large sample of university students, had rated similarity among all pairs of 20 political figures. The matrix of cross-products among these subjects' ratings was factored, and three dimensions or "points of view" about similarity were extracted. Interpoint distance estimates were computed for each dimension, and three separate multidimensional scaling analyses uncovered a different dimensionality for each viewpoint.

12:24. Individual differences in the structure of color perception. CARL HELM, *Educational Testing Service*. (Sponsor, Samuel Messick)

Torgerson's multidimensional triad ratio scaling procedure was utilized to determine similarity scale values for all pairs of ten color chips for each of nine normal and four color deficient subjects. These scale values were arrayed as a matrix with rows for scale values and columns for subjects. The matrix

of cross-products between subjects was factored, yielding a clear three-dimensional simple structure with all the normal subjects lying in one plane, and all the color deficient subjects lying in a second. Factor scores associated with various directions in this space were then determined and analyzed as multidimensional scales.

12:36. Extending the successive intervals model to the multidimensional case. WILLIAM P. HARRIS, *Massachusetts Institute of Technology*.

Extending Thurstone's Successive Intervals model results in an  $n$ -dimensional array of stimulus points carved into response regions by  $n-1$  dimensional hyperplanes. Interaction between dimensions involves three components: skew of the array of stimulus points, skew of the hyperplanes bounding the response regions, and correlation of the trial-to-trial "error" distribution. The model applies both to the classical problem of scaling multiple attributes of single stimulus objects and to the simultaneous detection of one attribute over a set of objects. In the latter case, the model is a partial theory of an elementary form of pattern recognition; data are analyzed to illustrate this case.

**Division 2. Symposium: Automated Teaching Methods in Undergraduate Instruction and Educational Research**

1:00-2:50. Parlor B, Morrison

L. VAN ATTA, *Oberlin College*, Chairman**Participants:**

- J. G. HOLLAND, *Harvard University*. Program design and use.
- J. A. BARLOW, *Earlham College*. Aspects of programming: Learning and performance.
- L. E. HOMME, *Teaching Machines, Inc.* Automated teaching versus the venerable curriculum.
- C. MCCOLLOUGH AND L. VAN ATTA, *Oberlin College*. The use of miniature programs to supplement conventional teaching techniques.
- C. GODCHARLES, *Hamilton College*. Principles and problems of machine design.

Discussant: F. S. KELLER, *Columbia University*.**Division 2. Symposium: The Use of Slides and Tape Recordings in the Teaching of Psychology**

1:00-2:50. Parlor D, Morrison

ROBERT S. DANIEL, *University of Missouri*,  
Chairman

## Participants:

G. D. OFIESH, *United States Air Force Academy, Colorado*. The use of slides and recordings in the teaching of introductory psychology.

M. METFESSEL, *University of Southern California*. The use of tape recordings in the teaching of advanced courses in psychology.

J. COHEN, *University of Illinois*. Prerecorded quiz sections in teaching general psychology.

L. A. BERMAN, *University of Illinois Navy Pier*. The use of graphic materials in course testing.

J. H. GROSSLIGHT, *Pennsylvania State University*. The functions of visuals in lecture presentation.

## Division 3. Psychopharmacology

1:00-1:50. Promenade Room, Morrison

V. H. DENENBERG, *Purdue University*, Chairman

1:00. The role of the area postrema in the regulation of food intake. HARRY J. CARLISLE AND ROBERT W. REYNOLDS, *University of California, Santa Barbara*.

Forty-two male albino rats were divided into four groups: those with ventromedial hypothalamic lesions, area postrema lesions, both ventromedial and area postrema lesions, and a nonoperated control group. Postoperative weight change analysis showed that hypothalamic hyperphagics gain considerable weight, area postrema operates lose 12.5% preoperative body weight, and ventromedial-area postrema subjects have a weight curve characteristic of the area postrema group. Amphetamine injections had a greater anorexigenic effect on all operated groups than on the nonoperated control group.

1:10. Effects of chlorpromazine and methamphetamine on rewarding and punishing components of brain stimulation. HERBERT BARRY III, ROBERT KIRSHNER, AND NEAL E. MILLER, *Yale University*.

Rats with electrodes chronically implanted in the median forebrain bundle, in the hypothalamus, were given a series of tests for self-stimulation after intraperitoneal injection of a drug or saline placebo, in a two-bar chamber where pressing one bar turned the stimulation on and pressing the other bar turned it off. Chlorpromazine (3, 2, 4, or 6 mg/kg) decreased the duration of self-stimulation by decreasing speed of turning the stimulation on, with less effect on speed of turning it off. Methamphetamine (3, 1, or 2 mg/kg) increased the duration of self-stimulation by increasing speed of turning it on, with variable effects on speed of turning it off.

1:20. The effect of chlorpromazine on food intake.

ROBERT W. REYNOLDS AND HARRY J. CARLISLE, *University of California, Santa Barbara*.

Food intake was measured in relatively satiated rats following injections of chlorpromazine in dosages ranging from 0.0 to 1.0 mg/rat. The results indicated that chlorpromazine produces an increasing consumption of food up to 0.6 mg/rat, and a decreasing consumption beyond this dosage level. Food intake at all dosage levels was significantly different from the control dose except the 1.0 mg/rat dose. These results contradict the conclusion of Schmidt and Van Meter that chlorpromazine depresses food intake. It is probable that the depression of intake beyond 0.6 mg/rat is due to sedation rather than a central anorexigenic effect of the drug.

1:30. Effects of phenothiazine tranquilizers on classical conditioning. LUCY GARDNER AND CELESTE MCCOLLOUGH, *Oberlin College*.

Two tones, one paired with unavoidable shock, were employed to establish discriminated cardiac, respiratory, and leg-flexion CRs. In dogs trained without drugs and tested under perphenazine (0.5 mg/K) or chlorpromazine (2-5 mg/K), the drugs inhibited motor CRs and altered or diminished respiratory CRs; cardiac CRs were less affected and were sometimes enhanced. Time CRs were inhibited and cardiac discrimination impaired. Dogs trained under these drugs showed cardiac and respiratory CRs, but cardiac discrimination was poor; in subsequent test trials without drugs, cardiac discrimination improved without further training, and motor CRs appeared for the first time in the perphenazine-trained animal.

## Divisions 3 and 5 and Psychometric Society. Symposium: Some Generalizations of Probability Learning

1:00-2:50. Jade Room, Sherman

JAMES S. CALVIN, *University of Kentucky*, Chairman

## Participants:

RICHARD C. ATKINSON, *University of California, Los Angeles*. Probability learning and discrimination.

C. J. BURKE, *Indiana University*. Some recent applications of statistical learning theory.

EMIR H. SHUFORD, *University of North Carolina*. Probability learning and psychophysical judgment.



PATRICK SUPPES AND JOSEPH L. ZINNES, *Stanford University*. Stimulus sampling theory for a response continuum with nondeterminate reinforcement: Some new models for search behavior.

### Division 5. Individual Differences

1:00-2:50. Ruby Room, Sherman

MAX D. ENGELHART, *Chicago Public Schools*,  
Chairman

1:00. Empirical evidence for a rational correspondence between the personality typologies of Spranger and of Jung. DAVID R. SAUNDERS, *Educational Testing Service*.

Operational definitions for six of Spranger's "Types of Men" are provided by the Allport-Vernon-Lindzey Study of Values. The dimensions of Jung's personality typology are measured by the Myers-Briggs Type Indicator, which yields four scores. In a particular factor analytic experiment, four factors account for 80% of the reliable variance of both instruments. When the Jungian dimensions are regarded as a simple structure, the Spranger types fall into a bipolar factor structure. The general form of this structure and most of its details were hypothesized in advance of this experiment.

1:12. Absence of a social desirability factor in the Allport-Vernon-Lindzey Study of Values. ERIC KLINGER AND HELEN H. GEE, *Association of American Medical Colleges*.

Social desirability of responses plays an important role in determining scores in many commonly used self-description inventories and scales. The present study examines the importance of this factor in scores on the Allport-Vernon-Lindzey Study of Values. The Study of Values and Edwards short form Social Desirability Scale were administered to 171 freshmen in one medical school and 140 seniors in another. Subjects had no known motivation to fake their scores. None of the correlations between the Study of Values scales and Social Desirability scores are significantly different from zero at the .05 level of confidence.

1:24. Verification of certain personality factors. ANDREW L. COMREY AND ALLADIN SOUFI, *University of California, Los Angeles*.

Forty-one variables believed to have some importance for the scientific study of personality were selected for investigation. Multiple choice items written to measure these defined variables were arranged in a test booklet. Packets containing three answer

sheets, the test booklet, and a set of instructions explaining the study and promising a later report on the respondent's test results were distributed to every third dwelling unit in most of the blocks of Culver City, California. About 300 answer sheets were returned from 1,000 packets distributed. Thirty-six clearly identifiable factors emerged from four factor analyses of the 234 items.

1:36. Size of the human figure drawing as an indicator of amount of life space required. DELL LEBO, *Child Guidance and Speech Correction Clinic, Jacksonville*.

Developmental, psychoanalytical, and clinical psychologists agree that assertive children utilize more space than nonassertive. Evaluation of this agreement is important because of interest in expressive movement and the prominence of drawing in projective methodology. Hypotheses were based on such published agreement with regard to drawing size, room space, and number of words for 80 children differing in aggressiveness and age. Positive relations between the amount of room space and number of words were established for both age and aggression by means of the *H* test. Drawing space was not related despite its long inclusion in the armamentarium of projective psychology.

1:48. Pattern analysis of movement responses and location categories on the Rorschach. HORACIO J. RIMOLDI AND THOMAS F. GRIE, *Loyola University, Chicago*.

A new method for objectively characterizing and quantitatively comparing Rorschach response patterns was used to investigate patterns of movement responses and location choices given by 200 normal college students and 148 psychoneurotic patients. Results indicate that, while normals and neurotics do not differ in percentage of movement responses given to each card, the neurotic response patterns are more variable than the response patterns of normals. Furthermore, when the neurotic pattern is evaluated with respect to the normal (expected) pattern, there is a significant difference between the two groups. Characteristics of and differences between response patterns of normals vs. neurotics and males vs. females are discussed.

2:00. Representation of vocational interests on an absolute scale. JAMES S. TERWILLIGER, *University of Illinois*. (Sponsor, Lee J. Cronbach)

A method is proposed for developing an occupational interest questionnaire which yields a profile of absolute "acceptance" scores rather than percentile

scores. The acceptance score is not a function of the popularity of the occupational area in the norm group. Several operational definitions of acceptance are compared. Four Kuder categories—Mechanical, Clerical, Artistic, and Persuasive—were studied. Occupations were selected to represent the distribution of occupations of each type in the 1950 Occupational Census. Items were based upon the sampled occupations. The relation of acceptance scores to percentile scores shows that the two scores carry different information.

2:12. Concurrent validation of a foreign language vocabulary aptitude test. RICHARD E. STAFFORD, *Pennsylvania State University*.

It was hypothesized that ability to associate nonsense syllables with English words should correlate with foreign language grades. The Silogram Test, consisting of nonsense syllables and English words, was given to 102 men and women and the results compared to their foreign language grades. Median scores of averaged language grades were significantly different ( $p < .005$ ), while correlations between specific languages and scores on the test ranged from .34 to .68 ( $p < .01$  to  $p < .0005$ ). Results indicate that the Silogram Test has a very significant relation to foreign language grades, especially discriminating between grades of A, and D or F.

2:24. A factorial analysis of verbal learning tasks. PAUL A. GAMES, *Ohio University*.

A battery of verbal learning tasks, including anticipation and present-recall tasks, constant and random order tasks, and serial and paired-associate tasks, was administered to 100 State University of Iowa students along with reference tests for the Rote Memory and Span Memory factors. The verbal learning tasks displayed negligible loadings on the Span factor, but substantial loadings on the Rote Memory factor. The Repeated Span tests shifted, with practice, from the Span factor toward the Rote Memory factor. A "letter pairs" content factor and a possible "anticipation method" factor or "constant order" factor were specific to the verbal learning tasks.

**Divisions 7, 12, 15, 16, and 17. Symposium: Positive Conceptions of Mental Health: Implications for Research and Service**  
(A symposium planned by the Committee on Interdivisional Relationships)

1:00-2:50. Grand Ballroom, Sherman

ARTHUR J. BINDMAN, *Massachusetts Department of Mental Health*, Chairman

Participants:

LOUIS LEVINE, *San Francisco State College*. Effective psychological functioning: Some clinical observations.

ABRAHAM MASLOW, *Brandeis University*. Independence of the environment.

JULIUS SEEMAN, *George Peabody College for Teachers*. Personality integration, performance, and value.

**Division 9. Symposium: Delinquency: Patterns, Causes, Cures**

1:00-3:50. Louis XVI Room, Sherman

RAYMOND GOULD, *National Institute of Mental Health*; AND RONALD LIPPITT, *University of Michigan*, Chairmen

Participants:

ALBERT MCQUEEN, *University of Michigan*. Comparative perspective on delinquency as a phenomenon.

MARTIN GOLD, *University of Michigan*. Comparative perspective on conceptions of causation.

DONALD COOK, *National Institute of Mental Health*. Comparative perspective on approaches to cure.

Discussants: ISIDOR CHEIN, *New York University*; AND SOLOMON KOBRIN, *Institute for Juvenile Research*.

Panel on Current Research:

FRED STRODTBECK, *University of Chicago*. Sociological emphasis.

CHARLES SEASHORE, *University of Michigan*. Social psychological emphasis.

RICHARD WALTERS, *University of Toronto*. Individual psychological emphasis.

JACOB HURWITZ, *District Court Clinic of East Norfolk, Massachusetts*. Clinical psychiatric emphasis.

**Division 12. A Variety of Interesting Papers**

1:00-2:50. Emerald Room, Sherman

DONALD L. GRUMMON, *Michigan State University*, Chairman

1:00. Some methodological issues in content analysis of psychiatric interviews. JEANNE S. PHILLIPS, RUTH G. MATARAZZO, JOSEPH D. MATARAZZO, GEORGE SASLOW, AND FREDERICK KANFER, *University of Oregon Medical School and Purdue University*.

Methodological assumptions, requirements for, and problems involved in establishing a satisfactory system of content analysis were examined in the course

of (a) the development of a multidimensional content categorizing system, (b) its application to patient verbalizations in partially standardized interviews for two groups of subjects, and (c) investigation of its relationships to another aspect of interview behavior (temporal interaction patterns as measured by the Interaction Chronograph). Issues examined included: requirements for and problems of establishing adequate interjudge reliability of unitizing and categorizing, invariance among subjects for some content dimensions, interrelationships among content categories, and necessity for replication.

- 1:10. Factors therapists associate with motivation to enter psychotherapy. ALLEN RASKIN, *Veterans Administration*.

Three of the 15 patient and therapist variables included in the study accounted for most of the predictable variance in therapist ratings of patient motivation to enter psychotherapy. These were Education, Type of Treatment Expected, and Liking for the Patient. High motivation patients were liked by therapists more than most other patients, had at least some high school or vocational school training, and came to the clinic expecting psychotherapy. The only consistent factor associated with low motivation ratings was the therapists' report that these patients came to the clinic expecting physical or medical treatment.

- 1:20. Changes in favorableness of attitudes toward concepts of mental illness. JOHN ALTROCCHI, *Duke University*.

While it has been demonstrated that a slight increase in information about mental illness may result in favorable changes in attitudes toward concepts of mental illness in the general population, a study of college students suggested that even an intensive summer session course in Abnormal Psychology may not produce such changes. The present study demonstrates that, in people who, like college and nursing students, have more information about and more favorable attitudes toward mental illness than the general population, certain favorable attitude changes can result from an intensive training period which combines didactic and experiential training directed toward learning psychotherapeutic behavior with patients.

- 1:30. A survey of Navaho Indian psychopathology. DALE L. JOHNSON, BERT KAPLAN, AND SHERMAN EISENTHAL, *VA Hospital, Houston, Texas, and University of Kansas*.

The results of an attempt to define patterns of Navaho Indian psychopathology are reported. One

Navaho community was studied intensively through informants and personal contacts. Records of state and VA hospitals and Navaho police were also examined. Nearly all of the ordinary psychiatric categories were found, but a pattern of episodic violence was predominant. Acting out disorders were much more numerous than depressive disorders. In addition, two disorders unique to the Navaho—"hand trembling sickness" and "moth sickness"—were investigated. The results of the survey are discussed in terms of characteristics of Navaho culture as described by anthropologists. Among the relevant characteristics are the Navaho emphasis on activity, their "shame" orientation, and their tendency to cope with problems through escape.

- 1:40. Generality of behavior changes of schizophrenics in group-oriented and individual-oriented occupational therapy. JOHN E. LUBACH AND JOHN W. CHOTLOS, *VA Hospital, Topeka, Kansas*.

A proposition basic to the rationale of any therapeutic technique is that behavior changes brought about in the therapy situation will have generality or carry over to other situations. This study investigated the generality of behavior changes of 24 chronic schizophrenic patients in an activity therapy (Occupational Therapy) to a structurally contrasting ward situation. The results supported the proposition that chronic schizophrenic patients adapt to the social structure of situations in that statistically significant behavior changes did occur in the activity situation. However, generality of these changes was not evident in that parallel changes in the ward situation were not obtained, although there were apparent effects.

- 1:50. Predicting continuation in group therapy with the Rorschach. WILLIAM RYAN, *Mount Auburn Hospital, Cambridge, Massachusetts*.

An assumption was made that therapy groups are situations of mutual dependence: that group members help one another, give to and take from one another. It was predicted that involvement in group would be related to objective Rorschach measures of "capacity for mutual dependence," defined in terms of "potential for giving" and "dependency management," and that patients high in this capacity—both "giving" and "flexible" in managing dependency wishes—would become more involved. Results with 25 VA outpatients support the hypothesis. Additional confirmation of the predicted relationship was supplied by replicating the study with 27 patients from other clinics.

2:00. A program for the social integration of chronic schizophrenics: Clinical and psychological test results. SIDNEY S. REIDER, *Verdun Protestant Hospital, Montreal, Canada*.

Although chronic schizophrenics have a disintegrating effect upon each other when they live together in large numbers on a single ward, when properly organized into a group they provide each other with social needs vital to the restoration of health. Such groups can be created and led by individuals who have not been specially trained but who are properly motivated. A six-month social activity program resulted in significant improvement in 20 chronic schizophrenics on objective psychological tests. A control group showed no significant improvement. Clinical improvement in the experimental group was also markedly greater than in the control group.

2:10. Clinical investigation through cases. CHARLES A. DAILEY, *Interstate Bakeries Corporation, Kansas City, Missouri*.

Naturalistic methods have basic importance for the clinician. Natural History describes behavior of organisms in their natural habitats, with special reference to their life cycles. It is asserted that not enough genuine clinical investigation is published, and not enough clinicians are publishing. It is hypothesized that the productivity of clinical investigation would increase if clinicians learned to use naturalistic methods. Five varieties of such investigation are defined and illustrated. Three appear to be economic uses of the clinician's scant research time. Necessity for close working relationships with experimentalists is stressed, as the logical consequence of the complementary limitations of both naturalistic and experimental methods.

#### Division 12. Symposium: Family Treatment of Schizophrenia

1:00-2:50. Bal Tabarin, Sherman

HAROLD M. HILDRETH, *National Institute of Mental Health*, Chairman

##### Participants:

IVAN BOSZORMENYI-NAGY, *Eastern Pennsylvania Psychiatric Institute, Philadelphia*. The concept of schizophrenia from the perspective of family treatment.

CHRISTIAN F. MIDELFORT, *Gunderson Medical Foundation*. The use of members of the family in the treatment of schizophrenia.

JAMES L. FRAMO, *Eastern Pennsylvania Psychiatric Institute, Philadelphia*. The theory of the technique of family treatment of schizophrenia.

ALFRED S. FRIEDMAN, *Philadelphia Psychiatric Hospital*. Can family treatment of schizophrenia be conducted in the home?

LESLIE SCHAFER, *National Institute of Mental Health*. The fragmentation of thought as an institution in the family of the schizophrenic patient.

Discussants: JOSEPH H. HANDLON, *National Institute of Mental Health*; AND JERRY OSTERWEIL, *University of Pennsylvania School of Medicine*.

#### Division 14. Symposium: Research Programs in Industry I

1:00-2:50. Bernard Shaw Room, Sherman

CARL H. RUSH, JR., *Ted Bates Advertising Agency*, Chairman

Participants: HERBERT H. MEYER, *General Electric Company*; AND BRENT N. BAXTER, *Prudential Insurance Company*.

Discussant: ERNEST J. MCCORMICK, *Purdue University*.

#### Division 17. Symposium: Current Research on Career Development

1:00-2:50. Parlor F, Morrison

ARTHUR H. BRAYFIELD, *Pennsylvania State University*, Chairman

##### Participants:

DAVID V. TIEDEMAN, *Harvard University*. The Harvard studies in career development.

JOHN W. GUSTAD, *Alfred University*. The career decisions of college teachers.

WILLIAM W. COOLEY, *Harvard University*. Career development of scientists.

HENRY BOROW, *University of Minnesota*. The career pattern study at Teachers College, Columbia University.

#### Division 21. Symposium: Human Factors in Real-Time System Reliability

1:00-2:50. Embassy Room, Morrison

JAMES W. DEGAN, *MITRE Corporation*, Chairman

##### Participants:

ROBERT B. MILLER, *International Business Machines Corporation*. New ways in the maintenance of real-time systems.

GILBERT K. KRULEE, *Northwestern University*. Training for reliable system performance.



ROBERT G. DEMAREE, *Psychological Research Associates*. Designing the human element into real-time systems.

EDWARD M. BENNETT, *MITRE Corporation*. Man's changing role in technology.

#### Films.

1:00-4:50. Terrace Casino, Morrison

#### Psi Chi. Symposium: Research Training for the Graduate Student

1:00-2:50. Walnut Room, Morrison

MAX MEENES, *Howard University*, Chairman

Participants: J. A. BAYTON, *Howard University*; H. B. LYMAN, *University of Cincinnati*; D. L. MARQUART, *University of Arizona*; B. R. SAPPENFIELD, *Montana State University*; AND S. ROSS, *APA Central Office*.

#### APA Board of Professional Affairs. Workshop: Must State Associations Deepen the Schism?

2:00-3:50. Cotillion Room, Morrison

GEORGE S. SPEER, *Illinois Institute of Technology*, Chairman

Participants: C. S. BRIDGMAN, *University of Wisconsin*; J. A. ELDER, *Washington State University*; I. E. FARBER, *State University of Iowa*; FRANK W. FINGER, *University of Virginia*; EVELYN HOOKER, *University of California*; AND MELVIN H. MARX, *University of Missouri*.

#### Division 1. Invited Address

2:00-2:50. Constitution Room, Morrison

SIGMUND KOCH, *Duke University*. Psychological Science versus the Science-Humanism Antinomy: Intimations of a Significant Science of Man.

#### Division 3. Verbal Mediation and Association

2:00-2:50. Promenade Room, Morrison

ARTHUR W. STAATS, *Arizona State University*, Chairman

2:00. The effect of intervening series on the free recall of pairs of digits. BENJAMIN W. WHITE, *Massachusetts Institute of Technology*.

When subjects add or multiply a series of digit pairs, and then are asked to recall the initial pairs,

the nature of the intervening series has a significant effect on accuracy of recall. An intervening series with changed stimuli interferes more with recall than one with a changed operation. In fact, changing only the operation does not make recall more difficult than making the intervening series identical in all respects to the initial series. If the stimuli have been changed in the intervening series, interference is less if the operation is changed as well.

2:10. The importance of the S-R role of the verbal mediator in mediate association. ROBERT J. SEIDEL, *Denison University*.

In the mediate association paradigm, A-B, B-C, A-C, four variations were utilized in an attempt to explore the stimulus-response nature of the verbal mediator. The conditions of the mediator, B, were: S-R, S-S, R-S, R-R. The addition of a control group yielded five treatments. The study was run as a Type I mixed design with a total of 20 subjects. The results indicated that mediation occurred irrespective of the specific S-R character of the mediator. However, the effect was enhanced if the mediator, B, was first a response and then a stimulus.

2:20. The role of forward and reverse association in transfer of training. PHEBE CRAMER AND CHARLES N. COFER, *New York University*.

The study investigated paired-associate verbal learning mediated by Kent-Rosanoff associations. Four experimental paradigms were tested: two had a primary verbal association between the stimuli, and two between the responses of the original and new learning pairs; in two the mediating associations were forward (S-R), and in two they were backward (R-S) associations. Finally, in two of the paradigms the stimulus members of the pairs and in two the response members varied from original to new learning. Results: both forward and reverse associations effect significant positive transfer, regardless of whether the stimuli or the responses change from the original learning to the transfer test.

2:30. The contribution of objective mediators to transfer in paired-associate learning. A. BARCLAY, *Washington University*.

An evaluation of the relative contribution of mediation to transfer effects in verbal learning was undertaken in this study. The provision for observable mediating stimuli in the experimental design offered a sensitive comparison of mediated transfer as contrasted with general transfer. It was felt that interpretation of the phenomena of mediation by recourse to the inferred action of mediating stimuli might

more parsimoniously be ascribed to the effects of transfer and that, when general and specific transfer effects are controlled, the residual increment in learning attributable to mediation is insignificant.

**Division 10. Symposium: What Is So Special About Esthetic-Media Therapies for the Mentally Ill**

2:00-3:50. Old Chicago Room, Sherman

ROBERT I. WATSON, *Northwestern University*,  
Chairman

**Participants:**

HANNA YAXA KWIATKOWSKA, *National Institute of Mental Health*. Family art therapy: Some preliminary observations on its use.

ELINOR ULMAN, *District of Columbia General Hospital*. Toward a useful definition of art therapy.

PRENTISS TAYLOR, *Chestnut Lodge, Rockville, Maryland*. How art therapy may help reintegrate the disordered mind.

PHYLLIS K. NOBLE, *Turtle Bay Music School*. Music: Art, communication, and therapy.

MARIAN CHACE, *St. Elizabeths Hospital*. When expressive therapy in the dance is contraindicated.

Discussant: ROBERT I. WATSON, *Northwestern University*.

**Division 14. Contributed Papers IV**

2:00-2:50. Gold Room, Sherman

ROBERT NUCKOLS, *Life Insurance Agency Management Association*, Chairman

2:00. Job satisfaction, job performance, and worker needs and satisfactions. RICHARD S. BARRETT, RAYMOND A. KATZELL, AND TREADWAY C. PARKER, *New York University*.

An attitude survey was conducted in 1956 among warehouse employees in a company which operated in 72 separate locations using similar industrial engineering procedures. Attitudes were found to correlate positively with important measures of performance. The simple conclusion that high morale causes high productivity is complicated by the relationship of other data with both morale and production. They include size of the city in which the warehouse was located, the size of the warehouse, the presence of a union, and the proportion of males in the work force. We conclude that high morale has not in this case been shown to be a cause of high production, but that both may be caused by the degree to which

the work satisfies employees' needs and expectations. The small town syndrome, in which the work force is predominantly female and nonunionized, is proposed as a source of needs and expectations which are more adequately met than those of the city workers.

2:10. Factor analysis of Air Force attitude and morale items. EDWARD E. CURETON AND GERALD H. WHITLOCK, *University of Tennessee*.

A questionnaire consisting of 167 five-point attitude-rating scale items was administered to 1,000 airmen at four Air Force bases. The 13,861 product-moment correlations between normalized item scores yielded eight centroid factors and 17 item-clusters. The factor matrix was rotated to yield eight primary attitudes. From the 17 clusters, seven were selected and modified to form relatively independent scales. An eighth scale (General Morale) consisted of 25 items close to the first centroid axis.

2:20. Validation of eight Air Force attitude and morale scales. GERALD H. WHITLOCK AND EDWARD E. CURETON, *University of Tennessee*.

Four hundred eighty airmen from Barksdale AFB were tested with eight attitude and morale scales. The relationships between the scale scores and 29 items of demographic and criterion information were determined. Low significant positive correlations were obtained between supervisors' ratings of over-all morale and all but one of the scales. Positive relationships were found also between the scales and supervisors' ratings on over-all job performance. With each of the following criterion items, at least one scale correlated significantly: frequency of injuries, frequency of requests to be excused from duty, and citations for good performance. Scale reliabilities were high.

2:30. A multivariate analysis of intention, attitude, and behavior. PETER A. HOLMAN, *System Development Corporation*.

Questionnaires containing short objective measures of attitude, motivational factors, intention, and behavior (football game attendance) completed by 154 students were used to develop discriminant function equations to predict intention and behavior of a similar sample of 153 students. Subsample intentions were predicted with 62% accuracy. Behavior (attendance) of one biosocial group was predicted with 73% accuracy. Attitude-behavior correlations varied with biosocial group and intention statement; individuals who predicted "not sure" and failed to attend were characterized by high scores in attitude and

motivational traits favoring attendance and low scores on measures of realistic thinking and orderliness.

## Division 2. Paper Reading Session

3:00-4:50. Parlor D, Morrison

E. MCGINNIES, *University of Maryland*, Chairman

3:00. The image of psychology: Some implications for teaching. ARTHUR W. SHERMAN, JR., *Sacramento State College*.

Door-to-door interviews were conducted with 338 males and 322 females, ages 18-92, representing all educational and occupational levels in greater Sacramento, California. Subjects were asked to respond to open-ended and agree-disagree type questions about psychology as a science and as a profession. It was found that most persons who had not studied psychology were vague about the role of the psychologist and had many misconceptions about human behavior. Some suggestions for enlightening the general public are offered, including the teaching of psychology in high schools and more articles written for popular publications.

3:15. Materials, techniques, and methods in teaching psychology in Indiana secondary schools. PAUL R. MCNEELY, *Asbury College*.

The purpose of this investigation was to determine what materials, techniques, and methods were used in the Indiana high schools offering a course in psychology as evaluated by teachers and students. Questionnaires from 1,236 students and 37 teachers were analyzed and compared. According to the findings the lecture-discussion method was most frequently used. A text was used by all and supplemental reading by about half of the teachers. Workbooks and syllabi were used infrequently. Both teachers and students desired more use of outside speakers, field trips, and audio-visual aids. The favorite topic of both teachers and students was personality.

3:30. A method of increasing the sensitivity of the multiple choice item. CLARENCE F. WILLEY, *Norwich University*.

A method of scoring multiple choice tests has been developed which elicits three recorded decisions on each item and thereby provides information on the examinee's ability to discriminate among the incorrect options. In addition to identifying what he believes to be the correct choice among five options, the examinee marks two options as definitely incorrect. There is a one-point penalty for simple errors, and

a three-point penalty if the correct answer is called definitely incorrect. This method of scoring rewards analytical judgment based on partial knowledge and reduces the influence of chance. Students in a general psychology course preferred this method to conventional multiple choice scoring.

3:45. The thinning effect: One method of studying mental synthesis. STAN J. VELINSKY, *Shorter College*.

In teaching general psychology a gap is found at the point where we proceed from simple sensory perceptions to complex contents of mind. An attempt is made to fill that gap by designing experimental ways enabling us to observe the process of mental synthesis. This paper describes one example of it from the field of tactile perceptions, namely, the thinning effect. The phenomenon is analyzed, its theory is developed, and it is subject to experimental checking. The new phenomenon is suitable to document certain conditions and qualities of mental synthesis and may be easily demonstrated to classes.

4:00. An experimental seminar for teachers involving interpersonal research by the teachers as an approach to the study of the emotional problems of children. RALPH W. COLVIN, *Astor Home for Children, Rhinebeck, New York*.

A seminar for teachers concerning the emotional problems of children was conducted involving research within an interpersonal theoretical frame of reference on the part of the teachers which revealed to them: (a) significant relationships between their attitudes toward children and the attitudes children have for one another, (b) significant relationships between how likeable they find a child and their tendency to rate him high on impulse control and low on dependency, (c) a tendency for their high authority-acceptance to be associated with preferences for more controlled and less dependent children. Teaching method and results are discussed with reference to their potential contributions to education and interpersonal theory.

4:15. A more integrative formulation for the chi square of ranks. ELLIS B. PAGE, ALAN WATERMAN, AND DAVID WILEY, *Eastern Michigan University and San Diego, California*.

Friedman's useful 1937 statistic, although often described as "chi square of ranks," for students of statistics has had little apparent relation with standard chi squares. In search of a valid three-way analysis of variance for ranks, present authors developed a newer formula consisting simply of the classic

two-dimensional contingency chi square multiplied by  $6/k$ , where  $k$  is number of ranks. It is more teachable, and in most cases computationally easier; but since formulation depends on constant  $E$ , problem of three-way analysis was not solved. Friedman's statistic is seen as increasingly helpful in combining heterogeneous data.

## Division 2. Symposium: Teaching Methods and Student Motivation in Foreign Countries

3:00-4:50. Parlor B, Morrison

D. BRIELAND, *Elizabeth McCormick Memorial Fund*,  
Chairman

### Participants:

H. C. LINDGREN, *San Francisco State College*.  
Italy.

F. E. FIEDLER, *University of Illinois*. Holland.

E. ENG, *Antioch College*. Austria.

P. CHAHBAZI, *Western Michigan University*. Iran.

Discussant: R. BEDELL, *United States Office of Education*.

## Division 3. Discussion: Psychopharmacology and Behavior

3:00-3:50. Promenade Room, Morrison

CHARLES B. FERSTER, *Indiana University Medical Center*, Chairman

An open invitation to attend and contribute.

## Division 3. Symbolic Processes

3:00-4:50. Hollywood Room, Morrison

JAMES VANDERPLAS, *Washington University*,  
Chairman

3:00. Prediction of recurrent sequences and level of irrelevant information. ABRAM M. BARCH, *Michigan State University*.

The hypothesis that variation in irrelevant aspects of stimuli retards identification of recurrent sequences of stimuli was tested by adding 0, 2, and 4 bits of irrelevant information to two different types of sequences. Sequence A contained runs of one or two (doublets); Sequence B had only runs of one. B was initially predicted better but showed less improvement with practice and showed no effect of irrelevant cue variation. A was predicted better later in practice, especially with low levels of irrelevant information. Predictive success on the sequences is explained by positional analysis based on negative recency.

3:10. Meaning associated with the phonetic structure of unfamiliar foreign words. GORDON A. McMURRAY, *University of Saskatchewan*.

Fifteen pairs of antonyms—five pairs to represent each of the three languages Czech, Chinese, and Hindi—were judged against each of 12 dichotomous semantic differential scales. Subjects ( $N=76$ ) showed very significant agreement in matching the foreign word-pairs with the scales. Analysis of the judgments showed one dominant dimension described as sharp-bright-fast-high-light-active vs. blunt-dark-slow-low-heavy-passive and a second dimension large-strong-dissonant vs. small-weak-harmonious. It was concluded that differences in the phonetic structure of unfamiliar words suggests meanings along these dimensions.

3:20. Classical conditioning of denotative meaning. ARTHUR W. STAATS, CAROLYN K. STAATS, AND WILLIAM G. HEARD, *Arizona State University*.

Recent studies have shown that a visually presented nonsense syllable paired once each with a set of auditorily presented UCS-words having a common connotative meaning component will be conditioned to elicit that component of meaning. This supports the view that meaning is an implicit response. It has been said that denotative meaning does not involve these same processes. The present study employed the method of conditioning meaning using words having a common denotative meaning component as UCS. Denotative meaning was conditioned separately from connotative meaning. The results have general significance for problems of reference in language and for semantic differential measurement.

3:30. Studies in abstraction learning: III. The transfer of perceptual versus abstraction learning. STANFORD C. ERICKSEN, *Vanderbilt University*.

This series is directed at the basic difference between perception and the abstraction process. It is hypothesized that abstraction learning will demonstrate stronger positive transfer effects than will perception learning. The operational distinction is established during the original learning and the transfer testing on a spatial-temporal walking maze. Two different transfer indices were computed, and both sets of data confirm the expectation. Perception, like place learning, is considered to be situation-bound, but abstraction is conceived as the more complex process of responding to a mediating symbol which represents the relations between stimuli.



- 3:40. Stimulus classification as a dimension of the mediation process. ALBERT R. MARSTON, *Indiana University*. (Sponsor, Alexander M. Buchwald)

In the theorized mediation process it is proposed that each individual develops a relatively fixed set of discrete stimulus classes, membership in which determines the responses to a presented stimulus. Subjects were trained to use one of several classifications and to associate a response to one member of each class. The training classification for each subject was postdicted with the hypothesis that generalization of the associated responses is greater to members of the training class. Over-all postdiction was not significantly successful, and it was felt that this result reflected a pre-experiment classification preference. In a follow-up, in which the subject's classification preference was taken into account, postdiction was significantly greater for those subjects trained on their preferred classification.

- 3:50. Information retention in concept learning. EARL B. HUNT, *Yale University*.

Three experiments on information retention in concept learning will be reported. Subjects were shown a series of geometric figures which defined a concept. They then had to categorize a series of test instances. Errors were analyzed to determine the relation between the position of an instance in the training series and the probability that the information transmitted by it would be utilized in categorizing. Retroactive interference effects were demonstrated. The experimental data were used to construct and test a model of information storage. The model is compatible with an information processing theory of concept learning.

- 4:00. Concept identification as a function of strategy. VLADIMIR PISHKIN, *VA Hospital, Tomah, Wisconsin*.

Quantitative predictions of concept identification performance are generated from theoretical parameters. These parameters are based on relevant information and feedback. No account is made of variables introduced by the subject. The present study was designed to determine the effects of subject-determined strategies (ST) and to modify the concept identification parameters in an attempt to improve the accuracy of prediction. The major findings were: (a) Preference STs had a significant, facilitating effect at all levels of irrelevant information. (b) The effects of ST were more apparent during initial learning. (c) The fitted and the obtained results were compared. Modified parameters were

established within the framework of a mathematical model for concept identification.

- 4:10. Concept attainment as a function of set, variety of examples, and informational adequacy. EILEEN A. LARSEN AND DOUGLAS N. JACKSON, *University of Colorado and Pennsylvania State University*.

This experiment was designed to evaluate the effects on the formation of relational concepts of varying conditions of (a) instructions (memorize, principle, or general principle); (b) variety of examples (1, 4, or 20); and (c) information (adequate or inadequate). Ninety subjects learned color-form relational concepts and later were tested on a transfer task. It is concluded that adequate information, and increasing the number of different examples, but not the different instructions, significantly facilitated concept attainment. It is hypothesized that set to memorize or to seek a principle may interact nonlinearly with variety of examples.

- 4:20. Concept formation as a function of prior relevance of a partially reinforced dimension. FRED ABRAHAM AND ISADORE GORMEZANO, *Indiana University*.

The purpose of this experiment was to compare learning to sort on one dimension with simultaneous partial reinforcement of a previously relevant dimension with that with simultaneous partial reinforcement of a previously irrelevant dimension in the Wisconsin Card Sorting Test. Learning, as measured by correct responses prior to criterion, was shown to be a decreasing function of amount of the partial reinforcement, but not a function of the prior relevance of the partial dimension. The former is a replication of earlier reports, while the latter places an important restriction upon earlier interpretations of partial reinforcement effects in concept formation experiments.

## Division 12. The Rorschach

- 3:00-3:50. Emerald Room, Sherman

IRWIN A. BERG, *Louisiana State University*,  
Chairman

- 3:00. Rorschach cognitive development scores as an approach toward classifying schizophrenic outpatients. REUBEN MARGOLIS, DAVID M. ENGELHARDT, NORBERT FREEDMAN, LEON D. HANKOFF, AND DAVID MANN, *State University of New York Downstate Medical Center*.

This paper explores level of cognitive development as a method of classifying schizophrenic outpatients. Rorschach records of 193 consecutive clinic admis-

sions were scored by Friedman's method. Intercorrelation of the various scores revealed a positive correlation between poor form responses and highly differentiated and integrated good form responses. On the basis of the findings, patients were classified into three groups: "amorphous," "mediocre," and "ideationally complex." Significant differences on psychological test measures of psychoticism and guardedness as well as social behavior pathology were found among these groups. No relationships were found on a measure of "planning" and psychiatric ratings of denial and psychoticism.

- 3:10. Rorschach movement responses, peer judgments of behavior, and the response total. ROBIN J. CLYDE, *University of Missouri*.

The validity of Klopfer's constructs for the Rorschach movement responses was tested by relating the number of these responses as produced by each subject to judgments of his behavior by his peers. Judgments were evaluated through the use of a check list. The constructs tested were for human movement: creative and intellectual capacities, and inner control; for animal movement: the degree of maturity and of acceptance of biological urges; and for inanimate movement: the inhibition of impulses arising from the presence of inner conflict and tension. Constructs for each movement determinant were found to be supported, particularly when the effect of the variability of response productivity was controlled by the use of the partial correlation.

- 3:20. Developmental level and inkblot perception.

JOSEPH S. THORPE, EDWARD C. MOSELEY, AND WAYNE H. HOLTZMAN, *University of Texas*.

This study deals with the relationships to chronological age of a large number of inkblot scores which are purported to measure perceptual development. The Holtzman Inkblot Test was given to four groups of normal subjects: 116 fourth graders, 184 seventh graders, 68 eleventh graders, and 96 college students. Developmental trend analyses were made for ten major variables as well as 29 configural scores derived from combinations of the others. In most cases the age trends were highly curvilinear, often with inconsistencies present in the two intermediate groups. In general, the findings are consistent with earlier work on the Rorschach.

- 3:30. A study of the comparability of the Behn-Eschenberg and the Rorschach Inkblot Tests. JAMES E. GILBERT, *American University*.

The problem of the comparability of the Rorschach and the Behn-Eschenberg Inkblot Tests was investigated. *Q* methodology was employed using five judges

and ten test protocols (*N* of the study being 108 behavioral statements that correlated with specific indices on the Rorschach). *Q* technique analysis revealed highly significant (beyond the 1% level of confidence) correlation coefficients concerning the relationship between sorts. Some sorts were not significant and seemed to vary with certain judge-test combinations. It may be concluded that the Rorschach and the Behn-Eschenberg are equivalent and elicit comparable results when administered to the same individual. However, this comparability seems to be a function of: the sophistication of the Rorschachian, ease of handling the *Q* technique, the characteristic of the protocol, familiarity with the Behn-Eschenberg, and the degree of "normality" of the individual tested.

- 3:40. Quantitative analysis of Rorschach movement responses of normals and psychoneurotics: A normative approach. BURTON SIEGEL, MARGARET ANN JACOBS, AND FRANK J. KOBLER, *Loyola University*.

The purpose of this research was to provide normative data for the Rorschach movement responses. Comparisons were made within and between 200 "normals" and 127 "psychoneurotics." The data resulting from human (*M*), animal (*FM*), and inanimate (*m*) movement served as a foundation for analyses of these responses. The systematic classification used in this study permitted an investigation of the many dimensions and qualities of the movement response, such as, the type of movement, whether a whole or a part figure was seen, the location of movement responses, the expansiveness of the movement, the projected sex and age level, and the popularity of the response. The results of this research—which are presented in terms of means, medians, standard deviations and frequencies—served as bases for comparison between male and female, psychoneurotic and normal groups. Future research is suggested.

#### Division 12. Symposium: Effects of Chemotherapeutic Agents on Human Behavior

3:00-4:50. The Assembly, Sherman

JULIAN J. LASKY, *Central NP Research Laboratory, Perry Point, Maryland*, Chairman

#### Participants:

JULIAN J. LASKY, *Veterans Administration, Perry Point, Maryland*. Predictor variables related to chemotherapy outcome.

SURESH SRIVASTVA AND LEONARD UHR, *University of Michigan*. Experimental studies of drug effects on normal human subjects.

ALBERTO DIMASCIO, *Massachusetts Mental Health Center*. Methodological problems related to human experimentation in drug research.

MARTIN M. KATZ, *National Institute of Mental Health*. Post-hospital evaluation of drug-treated patients.

Discussant: AUDREY HOLLIDAY, *University of Washington*.

#### Division 5. Specialized Instruments

4:00-4:50. Jade Room, Sherman

ARTHUR E. TRAXLER, *Educational Records Bureau*,  
Chairman

4:00. Testing intellectual functioning with severe time and response mode limitations. EDWIN COHEN, GEORGE B. SIMON, AND IRWIN MILLER, *General Precision, Inc., Binghamton, New York*.

Three batteries, each comprising 14 one-minute multiple-choice tests evaluating reasoning, verbal, mathematical, and perceptual ability, were constructed for centrifuge use to assess man's intellectual functioning under accelerations anticipated in space vehicles. Tests were short because man cannot tolerate extended high accelerations. Normative data were obtained (at 1 G) with three forms of administration: conventional paper-and-pencil, both group and individual, and individual administration by machine (new item replaces previous item in display when pushbutton response is selected). Individual paper-and-pencil and machine scores were not significantly different. Moderate reliabilities were achieved with the one-minute tests.

4:15. The measurement of mood: An evaluation of three methods. JOHN E. SNELL AND ALBERTO DIMASCIO, *Boston University*.

Three methods of mood evaluation were used in a study which involved double-blind administration of a number of fluonotropic drugs in different dosages to normal subjects. The methods included two different self-ratings and an observational rating. The results tended to show considerable differences among the drugs with respect to the ability of the methods to agree on mood changes. The self-rating methods showed more agreement with each other than did either with the observational rating. Paradoxical dosage effects were noted with certain drugs. The

implications of this finding for evaluation of mood rating methods is discussed.

4:30. Reliability of judgments of ward behavior. E. I. BURDOCK AND ANNE S. HARDESTY, *New York State Department of Mental Hygiene and Columbia University*.

A behavioral rating scale of 150 items has been designed to provide a measure of severity of illness and an index of response to treatment for hospitalized mental patients. Items are scored 0 or 1 according as the behavior is adaptive or not. About two-thirds of the items must be rated from direct observation and describe either psychomotor or verbal behaviors. The other 50 items (e.g., eating and toileting) may be taken from ward personnel or from the nurse's record. Scores were tested for normality by chi square; for interjudge agreement, by intraclass correlation; for item discrimination, by Hoyt's method.

#### Division 9. The Lewin Memorial Award Presentation and Address

4:00-4:50. Louis XVI Room, Sherman

STUART W. COOK, *New York University*, Chairman

#### APA. Conversation-Contact Hour

5:00-5:50. Parlor D, Morrison  
ROSS STAGNER, *Wayne State University*, Leader

5:00-5:50. Parlor B, Morrison  
MEREDITH P. CRAWFORD, *Human Resources Research Office*, Leader

5:00-5:50. Burgundy Room, Morrison  
DAVID WECHSLER, *New York University*, Leader

#### MONDAY EVENING, SEPTEMBER 5

#### APA. Conversation-Contact Hour

6:00-6:50. Burgundy Room, Morrison  
ANNE ROE, *Harvard University*, Leader

6:00-6:50. Parlor B, Morrison  
HARRY HELSON, *University of Texas*, Leader

6:00-6:50. Parlor D, Morrison  
FLOYD L. RUCH, *University of Southern California*,  
Leader

6:00-6:50. Parlor C, Morrison  
HARRY HARLOW, *University of Wisconsin*, Leader

**APA. Invited Address**

7:45-9:15. Terrace Casino, Morrison

NEAL E. MILLER, *Yale University*, Chairman

JOEL ELKES, Chief, *Clinical Neuropharmacology Research Center, National Institute of Mental Health, St. Elizabeths Hospital*. Habit and Discomfiture in a Pharmacology of Behavior.

**Divisions 9 and 14. Invited Address**

9:30-10:50. Bernard Shaw Room, Sherman

ALLYN MUNGER, *Standard Oil Company of New Jersey*, Chairman

E. WIGHT BAKKE, *Yale University*. The Social Psychologist and Organizational Theory.

**TUESDAY MORNING, SEPTEMBER 6****APA Board of Professional Affairs. Workshop: Contractor-Sponsor Professional Problems in Military Research**

9:00-11:50. Parlor C, Morrison

KENNETH F. THOMSON, *United States Naval Training Devices Center*, Chairman

**Participants:**

JAMES DUVA, *Air Force Cambridge Research Center*. Air Force sponsorship problems.

JAMES J. REGAN, *United States Naval Training Devices Center*. Navy sponsorship problems.

HENRY IMUS, *United States Naval Aviation Medical Center*. Inservice problems.

Discussants: LYNN E. BAKER, *Human Factors Research Division, Department of the Army*; AND KENNETH F. THOMSON, *United States Naval Training Devices Center*.

**Division 1. Paper Reading Session**

9:00-11:50. Venetian Room, Morrison

G. Y. KENYON, *University of Wichita*, Chairman

9:00. Franz Brentano and Sigmund Freud: An unexplored influence relationship. JAMES R. BARCLAY, *Idaho State College*.

This discussion centers around the evolution of the doctrine of intentionality. Two separate problems are considered: (a) the intrinsic similarities of the essential features of Brentano's concept of intentional ex-

istence, and Freudian theory and (b) the question of an influence relationship. Sigmund Freud attended a number of courses which were taught by Franz Brentano. These courses extended over a period of several years in the early 1870's. An evaluation of unpublished teaching manuscripts of Franz Brentano, dating from this period, affords evidence to the fact that Brentano's early psychological theories differed markedly from his later written publications.

10:00. Schema and phantom. MARIANNE L. SIMMEL, *Brandeis University*. JAMES G. MILLER, *Mental Health Research Institute, University of Michigan*, Discussant.

The amputation phantom may be considered as a sign of a cognitive schema of the body, which persists beyond the loss of the limb. Upon amputation a discrepancy arises between physical reality and the unchanged schema. The latter now reflects something more than the true state of affairs warrants. This "more" is the lost body part and manifests itself experientially as the phantom. Phantoms also follow upon denervation of a limb, e.g., through spinal lesions or, transiently, under regional anesthesia. Findings from such patients will be reported as basic to a systematic analysis of the problem.

11:00. The role of the central nervous system in human disease. LORING F. CHAPMAN, *Cornell University Medical College*.

Inappropriate adaptive responses—evoked, modulated, and integrated through the central nervous system—are implicated to some degree in the etiology and course of diseases of many categories including infectious, degenerative, neoplastic, and psychiatric. Through modulation of the magnitude of axon reflexes, neural activity integrated at several levels can augment or suppress inflammation and tissue damage within circumscribed regions. A proteolytic enzyme and a vasodilator polypeptide (neurokinin) are implicated in these reactions. Highest level brain functions are impaired following prolonged unsuccessful attempts at adaptation. This impairment is relevant to major disturbances of mood, thought, and behavior including the syndrome of schizophrenia.

**Division 3. Discussion: Measurement and Meaning of Bioelectric Processes**

9:00-9:50. Parlor D, Morrison

SAUL SELLS, *Texas Christian University*, Chairman; WITH ERNEST S. BARRATT, *Texas Christian University*; AND WILLIAM G. MATHENY, *Bell Helicopter Corporation*

An open invitation to attend and contribute.



**Division 3. Animal Learning**

9:00-9:50. Parlor B, Morrison

K. E. MOYER, *Carnegie Institute of Technology*,  
Chairman

9:00. Discrimination of vertical and horizontal directions in monkeys (*Macacca nemestrina*). JOSEPH BOSSOM, *VA Hospital, Boston, Massachusetts*.

Lashley reported that rats could discriminate between paired identical stimuli which differed only in their direction of orientation. In the present experiment four pigtail macaques were presented with pairs of planometric forms which were identical but oriented at 180° to each other—up and down or right and left. Each subject was rewarded for selecting forms oriented in one vertical direction and one horizontal direction. The subjects learned the vertical discrimination more rapidly and more completely than the horizontal discrimination. The results are interpreted as suggestive of a differential in the amount of information about direction acquired by organisms during their normal perceptual experience.

9:10. Position habits and discrimination learning by monkeys. A. J. RIOPELLE AND R. MCC. CHINN, *Yerkes Laboratories of Primate Biology and Emory University*.

A persistent problem in learning theory is the interaction of habits. In this experiment, four monkeys were trained to find food in the right foodwell on the first trials of a series of visual discrimination problems in order to determine if this spatial response would prevent learning the visual discriminations. No such effect occurred: the animals got 85% of the object discriminations correct (Trial 2) despite a similar number of correct positional responses on Trial 1. "Hypotheses" thus are not completely exclusive.

9:20. Latent extinction as a function of number of training trials. JAMES A. DYAL, *Southern Methodist University*.

Three groups of 10 rats were given 27, 77, and 210 training trials, respectively, in a straight alley runway. Experimental subjects in each group were given five 60" pre-extinction exposures to the empty goal-box, while control subjects were placed in a neutral box. All subjects were then given 10 regular extinction test trials, followed 23 hours later by another latent extinction placement series and a single test trial. Covariance analysis of goal-box speeds revealed a significant latent extinction effect which

was not influenced by number of training trials until the last test trial.

9:30. The persistence of a response in the absence of apparent motivation. HALBERT B. ROBINSON, *University of North Carolina*.

The persistence of a lever pressing response in the absence of apparent motivation was demonstrated. Subjects were 80 rats, in four experimental and three control groups. Animals first learned a primary response—running to the opposite compartment of an automatic shuttle box—to avoid the US (just sub-tetanizing shock) and then a secondary response—lever pressing—to avoid the CS (light, buzzer) with shock absent. After rigorous extinction of the running response, the lever pressing continued unabated. Some spontaneous recovery of the running response occurred, but lever pressing continued with substantial strength after running was again extinguished.

**Divisions 3 and 5 and Psychometric Society. Symposium: Psychophysics: One Hundred Years After**

9:00-11:50. Bal Tabarin, Sherman

WARREN S. TORGERSON, *Massachusetts Institute of Technology*, Chairman

Participants: EDWIN G. BORING, *Harvard University*; HAROLD O. GULLIKSEN, *Princeton University*; J. E. KEITH SMITH, *Massachusetts Institute of Technology*; S. SMITH STEVENS, *Harvard University*; AND JOHN A. SWETS, *Massachusetts Institute of Technology*.

**Division 14. Contributed Papers V**

9:00-9:50. The Assembly, Sherman

DONALD GRANT, *American Telephone and Telegraph Company*, Chairman

9:00. Perceived need satisfactions in bottom and middle management jobs. LYMAN W. PORTER, *University of California, Berkeley*.

This study investigated perceptions of need fulfillment deficiencies and need importance in bottom and middle management jobs. Five need areas, selected for relevance to the concept of a hierarchy of prepotency, were studied by means of a questionnaire: security, social, esteem, autonomy, and self-actualization. Results showed: bottom management positions more frequently produced deficiencies in need fulfillment than did middle management positions; the greatest differences in need fulfillment deficiencies

between bottom and middle management jobs occurred in the esteem, security, and autonomy need areas; higher-order needs were relatively the least satisfied needs in both bottom and middle management.

9:10. Employee reaction to organizational incentives. CHARLES L. SHAFFER, *New York University*.

Are company inducements to workers aligned with workers' goals? Incentives, to effectively motivate, should relate to individuals' needs and desires. Findings of this study suggest managements may increase labor tensions by present methods of reward. Preference of employees for intrinsic rather than extrinsic, and financial over fringe benefits, are indicated. Future adjustments if dictated by managements' personal preference may be contrary to the wishes of certain employee groups. How can companies ascertain employees' wants? Should this information be used in instituting future changes in incentives? Present compensation practices are questioned in terms of study results and motivational theory.

9:20. Value patterns of bank executives. ROBERT E. STOLTZ, *Southern Methodist University*.

Items presumed to represent various contemporary values were administered to 150 bank executives. A factor analysis of the item intercorrelations resulted in seven interpretable factors. These factors have been tentatively named: Personal Hedonism, Personal Independence, Effort in Work, Quality, Satisfaction as Group Member, Newness, and Independence in Work. The relationship of these factors to some personal history information from the sample and the implication for future studies is discussed.

9:30. Item favorableness ratings in a forced-choice test: Applicants vs. Nonapplicants. RAYMOND HEDBERG AND BRENT BAXTER, *Prudential Insurance Company of America, Newark, New Jersey*.

In building a forced-choice test, it would be easier and quicker to obtain favorableness ratings for the items from a nonapplicant group than wait to obtain them from applicants. But will the items be judged in the same way? This study obtained both sets of judgments and compared them. Nine percent of the items shifted in value (applicants viewed these items as more favorable). Since these items happened to be located in several different quintads in an experimental form of a forced-choice test, the changes in value spoiled 40% of the quintads set up on the basis of nonapplicant ratings.

#### Division 14. Symposium: The Measurement of Communication Effectiveness

9:00-10:50. Louis XVI Room, Sherman

DIK TWEDT, *Leo Burnett Company*, Chairman

##### Participants:

JOSEPH FRANKLIN, *Kenyon and Eckhardt*. Using quantitative order to reduce qualitative confusion in creating TV commercials which communicate more effectively.

JACK PETERMAN, *Buchen Company*. Communication in industrial advertising.

CLARK LEAVITT, *Leo Burnett Company*. Some relations between theory and measurement of advertising.

E. W. J. FAISON, *Institute for Visual Research*. The package as a communicator.

JOHN MALONEY, *Leo Burnett Company*. Perception of believability of mass communication.

Discussants: EUGENE WEBB, *Chicago Tribune*; AND DONALD KANTER, *Tatham-Laird*.

#### Division 19. Military Behavior Problems

9:00-9:50. Burgundy Room, Morrison

WILLIAM F. MADDEN, *Bureau of Medicine and Surgery, Department of the Navy*, Chairman

9:00. The prediction of rehabilitative potential of Army Stockade prisoners via psychological tests. ROBERT J. MARSHALL AND GERALD M. RAPAPORT, *Roosevelt VA Hospital, Montrose, New York, and Chicago, Illinois*.

The MMPI, WAIS, and Rosenzweig PF Study were used to make predictions about rehabilitative potential of 287 Army Stockade prisoners. With a two-year follow-up of military service as a criterion, it was found that demographical variables had no correlation with criterion, while MMPI variables and psychologists' predictions had statistically significant but low correlations with criterion. Psychologists committed a "leniency error." Predictions of failure proved to be higher than chance, while the actual successes were predicted more often than chance. The statistical use of the predictor variables are limited, but their clinical integration and application may be valuable.

9:15. Factors associated with military delinquency. WALDO B. LYON, *United States Naval Training Center, Bainbridge, Maryland*.

Three groups of naval enlisted men, totalling 426 men, who had become involved in certain forms of

military delinquency, were compared to a large normal sample of 5,054 sailors in their responses to a background inventory administered during recruit training. The three criterion groups proved reasonably homogeneous; but each group differed strikingly from the normals, especially in education, type of enlistment, age, sports participation, church attendance, and parental divorce. The military delinquent can be characterized as a long-standing character disorder who is deficient in the ability to postpone gratification, form meaningful "worthwhile" group associations, and resolve his dependency conflicts.

9:30. Rehabilitation of naval offenders. E. K. GUNDERSON, *United States Navy Medical Neuropsychiatric Unit, San Diego, California.*

Many naval personnel are committed to brigs and other places of confinement each year. Decisions must be made concerning discharge or retention of these offenders and concerning types of correctional programs to which they should be assigned. Since 1952 the Navy has conducted a research program concerned with prediction and treatment of military delinquency. A large amount of data relevant to classification and rehabilitation of naval offenders has been analyzed. Development of tests and other predictor variables useful for correctional classification is described and discussed. Results and implications of a closed-community treatment method for naval offenders also are presented.

## Division 21. Engineering Psychology II

9:00-9:50. Cotillion Room, Morrison

PAUL G. CHEATHAM, *Office of Naval Research, Chairman*

9:00. The psychophysics of picture display and a device for the automatic generation of pictures from maps. GILBERT B. LEE, *University of Michigan.*

Studies in outdoor visibility such as line-of-sight vantage point search problems and the amount and location of artificial lighting to augment natural illumination are hampered by the technical difficulty of accurately picturing these conditions even when maps and charts, visibility nomographs, and many other kinds of photometric data are available. To reduce this problem to manageable proportions a map scanning device was constructed and a picture drawing instrument designed which when activated by the map scanner replaces the human eye and brain in such tasks as contour counting, slope elevation and direction computation, and area albedo estimation from selected observation points on a map.

9:10. Radar operator detection thresholds as a function of seven electronic variables. R. E. LUBOW AND R. E. GRANDA, *General Electric Company, Ithaca, New York.*

Two experiments were performed to determine the detection threshold of radar signals in terms of signal to noise ratios. Employing a specially built radar simulator with a PPI presentation, certain parameters were varied experimentally while holding other pertinent factors constant. The basic electronic parameters examined were sweep speed, video bandwidth, spot size, scan speed, antenna beamwidth, PRF, and pulsewidth.

9:20. Man-machine tracking performance with short period oscillatory control system transients. FREDERICK A. MUCKLER, *Martin Company, Baltimore, Maryland.*

In the control of very high performance flight vehicles, the human operator has experienced difficulty in handling the unstable transient phenomena frequently encountered in guidance and control. It would appear that the limits of man's flexibility may be reached in these areas. There is a need for more detailed performance data concerning design limits of human manual flight control. The present study is a preliminary examination of simulated pitching, short period, oscillatory control system transients as they influence human tracking performance.

9:30. Human learning and performance during closed-loop centrifuge simulation of space vehicles. RANDALL M. CHAMBERS, *United States Naval Air Development Center.*

This paper presents an experimental program in which closed-loop human centrifuge simulations of three basic types of space vehicles were developed and in which human learning and psychomotor performance during simulated boost and re-entry rocket flight trajectories were analyzed. Subjects were 38 men who received 2,600 centrifuge exposures.

## Division 3. Animal Motivation

10:00-11:50. Parlor B, Morrison

LEON OTIS, *Johns Hopkins University, Chairman*

10:00. The effect of orbitofrontal cortical lesions on social interactions among cats. J. M. WARREN, *Yerkes Laboratories of Primate Biology.*

Nine normal adult cats were tested three times in competition for food with nine cats with orbitofrontal lesions in the Wisconsin General Test Apparatus

(WGTA) and in a large open field. The normal cats secured significantly more food than the frontals on the second and third tests in the WGTA and on the third test in the open field. Females bit and clawed other cats more often than males did. Aggression scores for frontal and normal males did not differ significantly. Normal females were significantly more aggressive than frontal females on every test.

10:10. Will rats work to escape from conflict?

MAURICE D. EGGER, *Yale University*. (Sponsor, Neal E. Miller)

Hungry rats pressing a bar for food and electric shock could "escape from conflict" by pressing another bar which delivered a time-out stimulus and disconnected the first bar for 30 seconds. As predicted, the rate of pressing on the "escape from conflict" bar decreased if the escape bar was made non-functional, or if the conflict was reduced by removing the shock from the reward bar, or by satiating the animals. However, control conflict animals for whom pressing produced only stimulus change, but not time-out, pressed at a rate comparable to that of the experimental animals.

10:20. The aversive drive properties of frustration.

LORRAINE A. LOW AND HOWARD I. LOW, *VA Hospital, Iowa City, Iowa, and State University of Iowa*.

This experiment was designed to examine alternative explanations which may account for the drive increment following a frustrating event. Previous studies have suggested an irrelevant drive explanation, although effects due to a relevant drive arising from the aversive properties of frustration is equally plausible. The position was therefore adopted, and confirmed, that escape from a frustrating event can be rewarding. The results suggested that frustration has aversive drive properties which are associated with the frustrating situation per se. The implications of these findings and those previously reported are discussed.

10:30. The effect of direct alteration of blood composition on eating. MONCRIEFF SMITH, RONALD POOL, AND HAROLD WEINBERG, *University of Washington*.

Previous work in this laboratory and others has suggested to us that blood tonicity (total osmotic pressure from all solutes) may be the one to which an organism responds in determining whether or not it is hungry. This experiment altered blood tonicity in the rat by direct intravenous injection of 5 cc. of fluid: either water, .7 M glucose in normal saline,

or .7 M xylose (nonmetabolizable) in normal saline. A no-injection control was also run. Relative to the control condition, water increased eating; while glucose and xylose decreased it, with glucose having more effect than xylose. These results are interpreted as lending partial support to the blood tonicity theory, although the glucose difference may indicate the importance of specific chemical reaction.

10:40. The aversive effect of food-associated secondary reinforcement upon extinction during thirst.

LYNE STARLING REID AND JAMES F. CAMPBELL, *University of Virginia*.

Previous research has demonstrated that rats subjected to cyclic water deprivation develop an aversion to dry food when thirsty. The experiment to be reported demonstrates that for rats with such a deprivation history a stimulus associated with food during hunger also functions in an aversive manner when the rats are made thirsty. For animals not having previously experienced water deprivation the stimulus has the opposite effect of increasing responding. Since the stimulus itself has never been associated with aversive consequences, the most reasonable interpretation of its role is that of activating aversive fractional anticipatory responses to food.

10:50. A procedure which produces sustained opiate-directed behavior in the white rat. JOHN R. NICHOLS, *Southeastern Louisiana College*.

Opiate withdrawal symptoms are quite distressing but may be terminated by an opiate intake. Thus, a response can terminate a distressing situation. Could this be escape training? Unlike humans, laboratory animals have little or no control over opiate intake, i.e., they have no escape response. Unlike humans, laboratory animals show little or no interest in opiates after withdrawal symptoms subside. Humans relapse; animal subjects do not. A procedure was designed to provide an escape action for white rats. In each of two separate experiments, some animals "relapsed." It is believed this is the first demonstration of relapse by animals.

11:00. A comparison of two response properties of food and secondary reinforcement in discrimination learning set. ROBERT E. BOWMAN, *University of Wisconsin*.

Food reward in discrimination learning facilitates performance, as measured by latencies, and also informs the subject which object to respond to, as measured by percentage of correct responses. The extent to which secondary reinforcement acts similarly was determined by training monkeys on discrimination learning sets under partial food rein-



forcement, with and without secondary reinforcement under the objects. Secondary reinforcement significantly increased correct response percentages without any corresponding decrease in latencies, and thus developed an informational capacity equivalent to increased reward ratio, but not a facilitative capacity. Therefore, drive reduction does not explain the action of this secondary reinforcement.

11:10. The acquisition and reversal of a position habit as a function of incentive magnitude.

BENJAMIN H. PUBOLS, JR., *University of Miami*.

Incentive magnitude was varied factorially such that each of two values during the acquisition of a Y-maze position habit by white rats was paired with the same two values during subsequent reversal of that habit. Measures of both level of performance and rate of learning were found to be affected by contemporary, but not prior, incentive magnitude. Although the results imply that incentive magnitude affects rate of learning as well as performance level, the suggestion is made that obtained differences in rate of learning may be attributed to differences in delay, rather than amount, of reinforcement.

11:20. The effect of drive and amount of reward in direct feeding on an instrumental running response. MATTHEW YARCZOWER AND WILLIAM A. ROBERTS, *University of Maryland*.

Spence's incentive motivation theory suggests that if, following a series of runs down a black runway to an empty black goal-box, there is direct feeding in the goal-box, the strength of the subsequent instrumental running response will be determined, in additive fashion, by amount of reward given in direct feeding and also by drive conditions during testing. A test of this deduction found that high incentive animals ran significantly faster than did low incentive animals, and those under high drive conditions ran significantly faster than those under low drive conditions. The additive nature of *D* and *K* was also supported.

### Division 3. Experimental Analysis of Behavior II

10:00-11:50. Parlor D, Morrison

JOHN BOREN, *Merck, Sharp, and Dohme Research Laboratories*, Chairman

10:00. Delayed feedback in the control of stuttering: An experimental analysis. ISRAEL GOLDIAMOND AND BRUCE FLANAGAN, *Southern Illinois University*.

Subjects classified as stutterers read from printed pages in daily sessions (90 mins.) continuing for

many months. Independent monitors record reading rate and each nonfluency; cumulative curves record stuttering rate. Under baseline conditions, stuttering and reading rates tend to vary inversely. Making a fixed period of delayed feedback immediately contingent upon each nonfluency markedly attenuates nonfluency, but not reading rate, which may rise. Presenting delay constantly, with each nonfluency eliminating it for a fixed period, may produce periods of sharp rise in nonfluencies, interspersed with periods of markedly attenuated nonfluencies and reading.

10:10. Control of thumbsucking in a young child by withdrawal and representation of positive reinforcement. DONALD M. BAER, *University of Washington*.

The withdrawal of positive reinforcement, possibly an important technique of control of child behavior, can be implemented for laboratory experimentation by showing children movie cartoons and programing interruptions of both picture and sound track as aversive stimulus events. The present study represents an attempt to extend this technique to the response of thumbsucking. Thumbsucking was punished by turning off the cartoons while the subject had his thumb in his mouth. The cartoons were immediately turned on again as soon as the subject removed his thumb from his mouth. Results show a rapid weakening of the thumbsucking response during periods of punishment and a prompt recovery during periods of nonpunishment, suggesting a process of discrimination.

10:20. A comparison of the behavioral effects of some stimulants in rats and humans. ARTHUR G. SNAPPER, FRANCIS MECHNER, AND RONALD C. RAY, *Schering Corporation*.

The purpose was to compare the effects of methamphetamine and methylphenidate on the operant behavior profiles of rats and humans. The subjects were two female retired company employees and male albino rats of Charles River stock. The drugs produced very similar patterns of behavioral effects in the rats and the humans. One of the points of similarity lay in the downward shift of the average waiting time in the procedure where a minimum wait is required for reinforcement. A second major similarity was observed in the procedure where the B response is not reinforced until a specified number of A responses has been made. Here, the drugs produced an increased frequency of premature B responses in both the rats and the humans. With the help of a digital computer, about 30 parameters of behavior were examined and compared in the two species.

- 10:30. Correlations between behavioral effects and metabolism of a psychotomimetic drug. ELIOT HEARST AND STEPHEN SZARA, *National Institute of Mental Health*.

Threshold intraperitoneal doses of diethyltryptamine (DET), just sufficient to depress avoidance behavior, were determined for individual rat subjects and were subsequently compared with individual rates of transformation of DET into its major metabolite, 6-hydroxydiethyltryptamine (6-HDET). Subjects more sensitive behaviorally to DET metabolized the drug faster than other subjects. Metabolically-formed 6-HDET, rather than the parent substance, DET, thus appeared primarily responsible for the behavioral effects, a conclusion further supported by much lower behavioral threshold doses for injected 6-HDET than for DET. Potentiation as a result of metabolic transformation in the body is unusual for a psychotomimetic drug; LSD-25 and mescaline are metabolized into inactive compounds.

- 10:40. Differential effects of drugs on generalization and discrimination in pigeons. WERNER K. HONIG AND RICHARD W. WORST, *Denison University*.

The effects of benzedrine and sodium pentobarbital were concurrently tested on the spectral generalization gradient and a conditional left-right discrimination in which spectral values provided the relevant cue. It was found that benzedrine did not affect the slope of the generalization gradient but raised the percentage of incorrect discriminatory responses over a water control, while sodium pentobarbital flattened the gradient but did not affect the percentage of discriminatory responses. The differential effects of these drugs indicate that the untrained discriminations inherent in the generalization gradient and the trained conditional discrimination involve different behavioral processes.

- 10:50. Avoidance behavior and plasma 17-hydroxycorticosteroid levels in rhesus monkeys. MURRAY SIDMAN, JOHN W. MASON, JOSEPH V. BRADY, AND JOHN S. THACH, JR., *Walter Reed Army Institute of Research*.

Monkeys avoiding shock display increased blood plasma levels of 17-hydroxycorticosteroids. Variables that alter the animals' rate of avoidance behavior also alter their plasma steroid levels. The monkey postpones a brief shock each time it presses a lever. By increasing the amount of time each lever press postpones shock, we decrease the animal's rate of responding and its steroid output. Giving the animal a warning stimulus before each shock also decreases

lever pressing rate and steroid output. Frequent unavoidable shocks increase the animal's rate of lever pressing and its steroid output. The same free shocks, without avoidance, do not maintain the high steroid levels.

- 11:00. Effects of striatal lesions on behavior under a multiple reinforcement schedule in monkeys. WILLIAM J. AYERS, ROBERT L. THOMPSON, AND FRED A. METTLER, *Columbia University*.

Cebus monkeys were trained to a stable performance level under a multiple reinforcement schedule for lever pressing. Under one stimulus condition, responses were reinforced only when spaced at least 20 seconds from the preceding response. Under a second stimulus condition, extinction prevailed. The schedule permitted observation of a simple visual discrimination of the successive type and "timing" behavior. Bilateral subtotal lesions in the caudate nuclei produced increased response rates and significant changes in interresponse time distributions. A visual discrimination decrement was obtained but may have been an artifact. The severity and duration of behavioral effects were dependent on lesion size.

- 11:10. Demonstration of a second-order avoidance in monkeys. J. FINDLEY, J. ZIMMERMAN, AND R. SCHUSTER, *University of Maryland*.

In the course of exploring a multiple schedule designed with built-in controls for the analysis of drug effects upon behavior, a manipulation of one of the components resulted in a reliable avoidance of an avoidance condition, or what might be termed a second-order avoidance.

- 11:20. A comparison of response differentiation and response rate during brightness discrimination in the rat. A. H. BLOCK AND J. M. NOTTERMAN, *Princeton University*.

Recent data have indicated that response differentiation accompanies the formation of an operant discrimination. The present study compared changes in bar pressing rate with a measure of response differentiation (i.e., peak force of response) during a series of brightness discriminations where the amount of stimulus disparity between  $S^0$  and  $S^A$  was the independent variable. Rate data concurred with previous studies and showed an increase in the difference of responding in  $S^0$  and  $S^A$  correlated with the increase in stimulus brightness difference between  $S^0$  and  $S^A$ . Force measures, however, showed a consistent difference (with force in  $S^A$  greater than the force in  $S^0$ ) independent of the change in stimulus disparity.

**Division 14. Symposium: Research Programs in Industry II**

10:00-10:50. The Assembly, Sherman

WILLIAM McGEHEE, *Fieldcrest Mills*, Chairman**Participant:**EDWIN R. HENRY, *Standard Oil Company of New Jersey*. An integrated research program in a multiaffiliate organization.**Division 21. Symposium: Automobile Driving Simulation**

10:00-11:50. Hollywood Room, Morrison

THEODORE W. FORBES, *Michigan State University*, Chairman**Participants:**THEODORE W. FORBES, *Michigan State University*. Review of interest and developments in automobile driving simulation.EARL ALLGAIER, *American Automobile Association*. Review of partial simulators developed for driver education use.SLADE F. HULBERT, *University of California, Los Angeles*. Progress with simulator research at UCLA.BERNARD H. FOX, *United States Public Health Service*. Psychological uses and needs for a research simulator and comments on a feasibility study.DAVID LEARNER, *General Motors Corporation*. Development and utilization of a minimum analogue driving simulator.Discussant: EDWARD R. JONES, *McDonnell Aircraft Corporation*.**Division 14. Contributed Papers VI**

11:00-11:50. The Assembly, Sherman

LYNDE STECKLE, *William, Lynde, and Williams*, Chairman11:00. Differential characteristics of executives. CHARLES PAUL SPARKS, *Richardson, Bellows, Henry and Company*.

Supervisory and staff personnel serving in a variety of businesses and industries have been tested, rated, surveyed, and interviewed by RBH personnel over the past several years. During the past five years these data have been consolidated into a series of studies aimed at differentiating highly successful ex-

ecutives from their less successful contemporaries or from their earlier peers who fell behind in the race. A crucial element in establishing experimental designs for these studies has been the criterion. Level of position attained, salary, ratings and rankings by superiors, definition of work elements involved in the position, generalized or specialized assignments: one or a combination of these made up the criterion variable. The possible predictor variables studied include tests of ability, interest measures, personality measures, background information, self-evaluations, and situational judgment items.

11:20. Background history factors that lead to executive success. JAMES J. KIRKPATRICK, *Byron Harless and Associates, Tampa, Florida*.

Background history data were collected on a group of over 600 chamber of commerce top executives. Utilizing ratings of overall job performance as a criterion, matched groups of above average and below average executives were selected for item analysis. The discriminating items generally dealt with such areas as early background history, education, extra-curricular activities, evidence of leadership, employment record, professional activities, and related factors. A weighted application form was developed which yielded an unusually high cross-validation correlation of .81 on 64 hold-out cases.

11:35. Some experiments on leadership, psychology, and organizational behavior. BERNARD M. BASS, *Louisiana State University*.

Theorems from *Leadership, Psychology, and Organizational Behavior* (Bass) provided hypotheses for experimental tests. This paper reports experimental verification of the following: (a) Successful leadership is related more to ability in effective compared to ineffective groups. (b) Successful leadership is related more to esteem in effective compared to ineffective groups. (c) Discrepancies between esteem and self-esteem result in unsuccessful leadership. (d) The relations between participation, coalescence, and effectiveness are lower in organized compared to unorganized groups. Results are based on objective measures of leadership derived from the correlated shifts in member judgments from before to after discussions.

**Division 14. Symposium: Implications of Psychology in Industrial Management Relations**

11:00-12:50. Grand Ballroom, Sherman

MORTIMER R. FEINBERG, *BFS Psychological Associates*, Chairman

Participants: SOLOMON BARKIN, *Textile Workers Union of America*; ARTHUR KORNHAUSER, *Wayne State University*; HERBERT A. SHEPARD, *Case Institute of Technology*; ROSS STAGNER, *Wayne State University*; AND AARON LEVENSTEIN, *Research Institute of America*.

### Division 21. Engineering Psychology III

11:00-11:50. Grand Ballroom, Morrison

EZRA V. SAUL, *Tufts University*, Chairman

11:00. Binary coded display studies. ALBERT C. HALL, *IBM General Products Division, San Jose, California*.

Many electronic computers require a display of alphanumeric information on operator's consoles. Several experiments were conducted using San Jose State College students as subjects. Numeric information in binary coded decimal form (four bits per digit) was presented in various configurations on simulated displays which used neons or incandescent lamps. Single-digit, two-digit, three-digit, and four-digit numbers were arranged in vertical columns, horizontal rows, and in special configurations. No significant differences were found in performance due to the two spacings used in these studies. However, the horizontal orientation of neons was found to be superior to the vertical arrangement for single-digit and two-digit numbers, but differences were not significant for three-digit and four-digit numbers. It was concluded that consistent use of horizontal presentations for binary coded decimal information is justified.

11:05. Behavioral responses to automobile traffic light patterns. A. C. BUSCH AND F. W. TRABOLD, *Crosley Division, AVCO Corporation*. (Sponsor, V. A. Sklodowski)

Because of man's inability to predict in advance of the yellow light when a standard automobile traffic signal is going to change, an experiment was conducted to test the following hypothesis: a driver, given auxiliary cues during the green portion of the traffic cycle, can reduce his decision and stopping time. Twenty-six subjects, while operating a driver training device, responded to four simulated traffic light patterns. A nonparametric analysis of the data indicated the following: (a) The experimental traffic light pattern with the horizontal rectangular green bar was found to be superior to the standard traffic light pattern and the other two experimental traffic light configurations. (b) The drivers of the automobile simulator made effective use of the auxiliary

cues presented during the green cycle time of the rectangular green light pattern.

11:10. Memory span for digits as a function of size of symbol set and mode of presentation. LEE W. GREGG AND KENNETH R. LAUGHERY, *Carnegie Institute of Technology*.

The purpose of the experiment was to provide information about the ways in which human observers might recode sets of symbols to improve short term retention. The experiment was patterned after the classical memory span experiment with digit words of length five, six, seven, eight, and nine symbols auditorily presented on tape at a uniform rate of one symbol per second. The words were composed of random digits either from a binary alphabet of one's or two's, or from the numbers one through nine. It was supposed that there would be no difference in the curves representing a decrease in number of words correctly reproduced as a function of word length for the different sizes of symbol sets for the random mode of presentation. With the systematic mode, however, the binary symbol set should be greatly facilitated. Such was not the case. The binary set yielded superior performance overall, but that variable did not interact in the predicted manner with mode of presentation.

11:15. Static and dynamic pitch perception in simulators. ELMO E. MILLER, *General Precision, Inc., Binghamton, New York*.

Two experiments were conducted to provide a basis for choosing a type of B-58 simulator pitch motion. Thirty subjects were used. The apparatus consisted of a cab with an aircraft seat and associated equipment to impart vertical movement and rotation in the medial (pitch) plane. Experiment 1 concerned the constant and variable errors of judging static pitch angle. Experiment 2 concerned judgments of pitch motions.

11:20. The role of "expectancy" in auditory vigilance. ARTHUR FLOYD, JR., GARY D. GRIGGS, AND ROBERT A. BAKER, *United States Army Armor Human Research Unit, Fort Knox, Kentucky*.

If expectancy levels are firmly established and then radically modified during vigilance sessions, the expectancy hypothesis would predict significant changes in probability of detection. Three groups of Armor trainees with normal hearing, randomly assigned 15 to a group, served as subjects. Each group was required to monitor an intermittent tone and to report all changes in pitch. At prearranged intervals the fre-



quency was shifted from 800 cps to 850 cps for either 3, 4, or 5 beats and then returned to 800 cps. During the test, Group B (signal rate unchanged) not only detected the greatest number of signals but also counted the signals with greater accuracy. Moreover, only Group B showed improvement with time in both number and accuracy of signals detected. The results are interpreted as supporting Deese's hypothesis that the observer's level of expectancy to some extent determines his vigilance level and hence his probability of detection.

11:25. Manual application of impulses while tractionless. ERNEST DZENDOLET, *Aerospace Medical Laboratory, Wright Air Development Division.*

A two-dimensional simulation of zero-gravity allowed investigation of a simple manual push-in, pull-out task. Twenty college students were instructed to push in or pull out a metal plunger in one motion against various forces and for various distances while seated on an air-bearing device allowing three degrees of freedom. When a large-force impulse was applied, the subject placed himself directly behind the point of application of the force. The percentage of subjects who gave correct responses fell as a function of the required force and travel distance. For pushes and pulls, the duration of the impulse decreased as a function of an increase in the required force. Pull-out impulses were statistically and practically shorter than push-in impulses.

11:30. An investigation into the relationship between extra-experimental experience and performance with various display-control combinations. MARSHALL A. NARVA, *Martin Company, Baltimore, Maryland.*

The general finding of superior performance with congruent display-control relationships has generally been attributed to the correspondence of these relationships to those utilized in the "everyday" experience of the subjects. This study investigated performance as a function of the degree of correspondence of control and task variables to the specific extra-experimental experience of a selected subject population. The experimental task was to move a spot of light to the center of a cathode ray tube, which was fixed in the vertical plane. Performance with the natural sensing and the vertical plane was consistently superior, even in the presence of the Link flight control task. The results indicate that the subjects did not transfer their specific experience with the characteristics of a flight control stick to the use of the experimental control.

11:35. The COED: A device for human factor and psychological research. DONALD A. GORDON AND BRUCE BERGUM, *Bendix Systems Division.*

The COED (Computer Operated Electronic Display) is essentially a computer driven cathode ray tube. This combination, with suitable controls, has the unique capability of simulating feedback situations where the operator's responses affect the situation shown on the display. This ability permits the COED to be adapted to a variety of research applications, including systems simulation, psychological experimentation, and data analysis.

## TUESDAY AFTERNOON, SEPTEMBER 6

### Division 1. Discussion: The Reality of Hypnotic Behavior and the Fiction of "Hypnosis"

12:00-12:50. Venetian Room, Morrison

THEODORE X. BARBER, *Worcester Foundation for Experimental Biology, Chairman*

Discussants: WILLIAM I. HERON, *Bowdoin College;*  
AND CLARENCE LEUBA, *Antioch College.*

### Division 3. Discussion: Experimental Analysis of Behavior: Recent Developments

12:00-12:50. Parlor F, Morrison

THOMAS S. GILBERT, *University of Alabama, Chairman*

An open invitation to attend and participate.

### Division 3. Brain Activity and Behavior

12:00-12:50. Parlor D, Morrison

GILBERT W. MEIER, *Vanderbilt University, Chairman*

12:00. Effects of sleep deprivation on activation level in human subjects. ROBERT B. MALMO AND WALTER W. SURWILLO, *Allan Memorial Institute, McGill University.*

The main purpose of this study was to determine whether physiological indicants of activation are significantly affected by deprivation of sleep. Three subjects were intensively studied in 60-hour vigils with continuous physiological recording during ten one-hour tracking sessions. On the whole, the data strongly supported the conclusion that sleep deprivation had the effect of increasing level of activation as measured by physiological indicants. Increased

muscle tension was found to be localized rather than general. It appeared that the special environmental stimulating conditions employed in this investigation were particularly conducive to the appearance of "hallucinations."

12:10. Operant conditioning of single unit responses. JAMES OLDS, *University of Michigan*.

In an effort to condition "behaviors of the brain" in curarized rats, single unit responses recorded by microelectrodes were reinforced by stimulation of hypothalamus. Some unit responses derived from paleocortical structures were successfully conditioned, but those derived from neocortex could not be modified by reinforcement procedures.

12:20. Electroencephalographic changes during prolonged visual discrimination training in cats. EVERETT J. WYERS, NATHANIEL A. BUCHWALD, AND JEAN CARLIN, *University of Southern California, University of California, Los Angeles, and VA Hospital, Long Beach, California*.

Brain activity during prolonged approach discrimination of flashing lights at intermediate response accuracy levels was studied electrographically. Accuracy was manipulated by enforced response delays. Brain activity characterizing correct and wrong responses was not found. The lateral geniculates "followed" the frequency of the positive light. Occipital cortical "following" was increasingly interrupted by high voltage, 5-cycle waves, often just before signal termination, as training was prolonged. Caudate stimulation did not influence these waves, although response accuracy was reduced, even after prolonged experience with signals once readily discriminated. "Spindle" waves (12-15 cycles) following signal termination were noted in occipital cortex.

12:30. Frontal lobes role in thinking: Electroencephalographic findings. DUILIO GIANNITRAPANI AND VIOLET STUDDARD, *VA Center, Wadsworth, Kansas*.

This study investigates differences in EEG patterns in eight brain areas in two conditions: thinking and mathematical problem solving. An original scoring method was developed measuring relative changes in activity without consideration of the frequency of the components. Results indicate that practically all frequency counts in the "thinking" condition are higher than those in the "resting" condition. Over and above these differences the ratios between the two conditions for each EEG lead were consistently higher in the frontal lobes than in the occipital lobes, clearly demonstrating the higher degree of electrophysiological activity of the frontal lobes in thinking.

### Division 3. Human Perception

12:00-12:50. Parlor B, Morrison

MALCOLM ARNOULT, *Texas Christian University, Chairman*

12:00. Kinesthetic and intermodal tilt aftereffects.

RICARDO B. MORANT, *Brandeis University*.

Recent studies have indicated that tilt aftereffects occur across the visual axes and across the parts of the visual field separated by the median vertical. These findings indicate that such effects are possibly of a more organismic nature than generally has been supposed. Two experiments, designed to further investigate this possibility, are reported. The results of the first experiment show that tilt aftereffects are demonstrable in a sense modality other than vision; the second, that they are demonstrable intermodally. The implications of these findings for current theories of figural aftereffects are discussed.

12:10. A method for studying depth perception in infants under six months of age. ROBERT L. FANTZ, *Western Reserve University*.

Direct information on the ontogenesis of spatial vision in humans has been lacking due to the difficulty in testing infants before the maturation of coordinated responses. This difficulty was overcome by measuring under controlled conditions the relative amount of visual interest shown in stimulus objects differing in depth or solidity. Significant numbers of infants in a series of studies showed more visual response to a solid object than to a flat object, thus evidencing the beginnings of depth perception during the first six months. Increased responsiveness was shown in the latter part of this period.

12:20. Immediate and residual figural aftereffects in kinesthesia. R. ALLEN GARDNER, *Quartermaster Research and Engineering Center*.

Three groups of 20 subjects each made 13 kinesthetic judgments on each of five days. Between the twelfth and the thirteenth judgment, Group E(+) was satiated so as to induce overestimation of the standard, Group E(-) was satiated to induce underestimation, and Group C merely rested. An equal, opposite, and constant immediate FAE was obtained for both experimental groups on each day. A significant, cumulative, residual FAE was obtained for Group E(+) over all five days, but Group E(-) showed no detectable residual effect during the entire course of the experiment.

12:30. Association value of nonsense shapes as a function of complexity and curvature. WILLIAM F. BATTIG, *University of Virginia*.

The association value of nonsense shapes, constructed by the Attneave-Arnoult method, was studied as a function of complexity (number of sides) and curvature (proportion of curved sides). Significantly more associations were given to all-curved shapes than to shapes with straight sides. Contrary to Vandierplas and Garvin, who used only straight-sided shapes, association value showed no overall significant decrease with complexity. This difference can be resolved in terms of a significant complexity by curvature interaction, such that association value decreased with complexity for straight-sided shapes only, and not for all-curved shapes.

#### Division 5 and Psychometric Society. Luncheon and Invited Address

12:00-1:50. Old Chicago Room, Sherman

JACK W. DUNLAP, *Dunlap and Associates*. Psychometrics: A Special Case of the Brahman Theory.

#### Division 19. Factors Affecting Performance

12:00-12:50. Burgundy Room, Morrison

PRESTON S. ABBOTT, *Human Resources Research Office*, Chairman

12:00. A laboratory study of the effects of turnover on an information processing system. M. S. ROGERS, J. D. FORD, JR., AND J. A. TASSONE, *System Development Corporation*.

Turnover of members of information processing crews was found to reduce system performance. An "experience degradation" model was developed which partially accounted for the results. It was shown that the performance of an experienced crewman was reduced when the new crewman was placed on the receiving end of a communication link between them. This effect was not found when the new crewman was on the sending end of the line. Some suggestions are made for reducing performance degradation due to crew turnover.

12:10. Evaluating intellectual abilities of man undergoing acceleration. IRWIN MILLER, GEORGE B. SIMON, AND EDWIN COHEN, *General Precision, Inc.*, Binghamton, New York.

To determine whether intellectual abilities will be impaired during the accelerations associated with manned space flight, a testing device and three test

batteries were developed for use in a human centrifuge at accelerations up to 14 G. Remotely controlled, the device displays multiple-choice items successively, indexing and scoring automatically when the subject responds by pushbutton or (optionally) a preset interval has elapsed without response. Each battery contained 14 one-minute (limit of tolerance to 10 G) tests of reasoning, verbal, mathematical, and perceptual ability. Tests were administered by paper-and-pencil and machine to secure 1 G normative data.

12:20. Intellectual and perceptual functioning during confinement. DONALD W. ORMISTON, *Aerospace Medical Laboratory*.

This study involved 48 hours of confinement in a cramped capsule with one-half of the subjects receiving space food servings and the other half receiving food in a conventional manner. Control subjects were run under the same conditions except they were confined only while eating or working on tasks. The tasks were: compensatory tracking, monitoring, embedded figures, form discrimination, reconnaissance photographs, arithmetic, memory for digits and confusing sentences, same-opposite meanings, verbal analogies, memory for nonsense syllables, and logical reasoning. These tasks were administered at various intervals. Trends of performance over the 48 hours were compared.

12:30. The effects of wearing the CBR protective mask upon the performance of selected individual combat skills. WILLIAM E. MONTAGUE, *Human Resources Research Office*.

The effects of wearing the protective mask on individual combat skills were measured. Performance test scores of masked soldiers were compared with their scores when tested under comparable conditions without masks. Military activities tested were: driving vigilance, radio communication, target detection with unaided vision and with binoculars, firing shoulder weapons, cross-country running, and unaided voice communication. Average losses due to masking ranged from 1-41%. The greatest decrement appeared in tests of unaided voice communication, indicating a need for additional emphasis on the use of other means of communication in combat.

#### Division 1. Symposium: The Current Status of Soviet Psychology

1:00-2:50. Grand Ballroom, Morrison

ALLEN CALVIN, *Hollins College*, Chairman

## Participant:

HERBERT L. PICK, *Cornell University*. Some current trends in experimental psychology in the Soviet Union.

ALLEN CALVIN, *Hollins College*. Selected interviews with Soviet psychologists.

Discussants: DONALD B. LINDSLEY, *University of California*; AND GREGORY RAZRAN, *Queens College*.

### Divisions 1 and 19. Symposium: Psychological Classification of Tasks

1:00-2:50. Burgundy Room, Morrison

A. W. MELTON, *University of Michigan*, Chairman

## Participants:

T. E. COTTERMAN, *Behavioral Sciences Laboratory, United States Air Force*. Task Classification: An approach based on the general properties of stimuli, responses, and their interrelations.

MARSHALL B. JONES, *United States Naval School of Aviation Medicine*. Task Classification: Correlational analysis and kinds of learning.

ELMO E. MILLER, *General Precision, Inc.* Task classification: One approach to classifying learning tasks.

L. W. STOLUROW, *University of Illinois*. Task classification: A systems approach.

Discussants: JUDSON BROWN, *University of Florida*; AND PHILIP DUBOIS, *Washington University*.

### Division 3. Sensory Processes (Central)

1:00-1:50. Parlor B, Morrison

JACK VERNON, *Princeton University*, Chairman

1:00. Comparison of the effects of amygdaloid and inferotemporal lesions on somesthetic discrimination in the monkey. J. S. SCHWARTZBAUM AND KARL H. PRIBRAM, *University of Wisconsin and Stanford University*.

Somesthetic discrimination of roughness was studied in normal and brain-damaged monkeys in an effort to differentiate between discriminative functions of the amygdaloid complex and inferotemporal neocortex. Unlike inferotemporal operates, amygdalotomized monkeys showed a severe learning deficit on this problem. However, the inferotemporals showed an impairment on a subsequent problem involving alternate tests with each of two overlapping pairs of somesthetic stimuli. The experiment implicates the amygdaloid complex in discriminative functions in a role that can be differentiated from that of inferotemporal neocortex. But it would appear

that the inferotemporal cortex may also subserve functions not specific to vision.

1:10. Deficits in visual retention following lesions of the right temporal lobe. DOREEN KIMURA, *McGill University*. (Sponsor, Brenda Milner)

Patients with lesions of the right temporal lobe were compared with patients with lesions of the left temporal lobe on a test involving the repeated presentation of unfamiliar visual stimuli. The right temporal group was significantly inferior to the left in differentiating between the recurring figures and those which were not repeated. These results suggest that the right temporal lobe plays a role in the retention of some types of nonverbal material. This is consistent with the finding that bitemporal damage results in a deficit in memory for recent events (Milner).

1:20. The response of the cat's cerebral cortex to pure tones. NATHAN B. GROSS AND ARNOLD M. SMALL, JR., *Lehigh University and University of Iowa*.

Bioelectric potentials were recorded from the exposed cortex of anesthetized cats to pure tones ranging from 500 to 49,000 cps at 35 db. above threshold. Maps were constructed based on response amplitude and latency. Areas of focal response were found for the various tones, surrounded by areas of lesser response, which extend over most of the "auditory area." Comparison of the focal response areas indicates considerable individual differences between animals. There were marked discrepancies between amplitude and latency maps. This raises the question of the proper criterion for designating the focal response.

1:30. The effect of damage to the interpeduncular nucleus on retention of a kinesthetic habit in rats. ROBERT THOMPSON, *George Peabody College*.

Adult rats blinded by enucleation were trained on a kinesthetic habit in an incline box. Lesions in the interpeduncular nucleus of the midbrain produced a significant loss in retention, the degree of impairment being positively related to the amount of damage to this nucleus. Mesencephalic lesions sparing the interpeduncular nucleus had no effect on retention. These results in conjunction with those previously obtained on a visual habit further emphasize the importance of the interpeduncular nucleus on memory.

### Division 14. Symposium: Recent Developments in Consumer Research

1:00-2:50. Bal Tabarin, Sherman

GERHART WIEBE, *Elmo Roper and Associates*, Chairman



Participants: WILLIAM D. WELLS, *Rutgers University*; AND FRANK MAYANS, *Young and Rubicam, Inc.*

#### Division 21. Symposium: Primary Task Factors in Performance Decrement

1:00-2:50. Terrace Casino, Morrison

STUART WRIGHT, *Applied Psychology Corporation*,  
Chairman

Participants:

ABRAM M. BARCH, *Michigan State University*.  
Continuous automobile driving.

SAMUEL DALZELL, *United States Navy Bureau of Naval Personnel*. Naval needs in performance research.

DON FLINN, *Aerospace Medical Center, Brooks Air Force Base*. Impoverished sensory environments and prolonged task periods.

THEODORE W. FORBES, *Michigan State University*.  
Task factors in driving.

SIDNEY FRIEDMAN, *United States Navy Bureau of Naval Personnel*. Task problems in the Navy.

HAROLD L. WILLIAMS, *Walter Reed Army Institute of Research*. Sleep deprivation and fatigue.

#### Division 3. Subcortical Processes

2:00-2:50. Parlor B, Morrison

FREDERICK A. KING, *University of Florida*,  
Chairman

2:00. Eating or drinking in satiated rats due to adrenergic or cholinergic stimulation, respectively, of the lateral hypothalamus. SEBASTIAN P. GROSSMAN, *Yale University*. (Sponsor, Neal E. Miller)

Double cannula systems, allowing repeated stimulation with chemicals in solid form, were permanently implanted, by means of a stereotaxic instrument, into the lateral hypothalamic region of 12 albino rats. Injecting minute amounts of adrenaline or noradrenaline caused unrestrained, satiated rats to eat from 1-11 grams of dry food within 40 minutes. Stimulation of the same point in the same animals with acetylcholine or carbachol caused them to drink from 5-19 cc. of water without eliciting any eating. The effects were repeatable and highly localized. Controls for osmotic stimulation (NaCl) and general excitation (strychnine) failed to produce similar effects.

2:10. The effects of electrical stimulation of the ventromedial nucleus of the hypothalamus on feeding behavior. FRANKLIN KRASNE, *Yale University*. (Sponsor, Neal E. Miller)

The hypothesis has been advanced that the lateral hypothalamic area contains a "feeding center" which is inhibited by firing of the ventromedial hypothalamic nucleus. Thus, satiation for food might be represented physiologically as increased activity of the ventromedial nuclei. The present study finds that stimulation in the area of the ventromedial nucleus does inhibit the feeding behavior of hungry rats but that the animals will learn an instrumental response to escape from such stimulation. The results are, consequently, somewhat ambiguous in that the inhibition of feeding may be due to the aversiveness of the stimulation.

2:20. "Rage" as a consequence of ablation of the septal nuclei in cats. R. Y. MOORE, *University of Chicago*.

Rats with lesions involving the septal nuclei of the basal telencephalon show enhanced irritability and emotional reactivity. This syndrome, termed "septal rage," approximates the affective defense reaction described by W. R. Hess. Heretofore, "rage" following septal ablation has not been observed in cats. In this experiment six cats with septal area ablations showed mild to severe "rage," related roughly to the amount of destruction of medial and lateral septal nuclei. However, three other cats with prior hippocampal lesions were unaffected by the septal ablation. Lesions in the dorsal hippocampus and fornix or in the anterior limbic cortex also had no effect.

2:30. Hypothalamic hyperphagia and social interaction in the monkey. C. L. HAMILTON AND JOHN R. BROBECK, *VA Hospital, Coatesville, Pennsylvania, and University of Pennsylvania*.

The dominance hierarchy of a group of six rhesus monkeys was determined to be identical on two competitive tests—food gathering and avoidance of shock. Bilateral lesions in the region of the ventromedial nuclei of the hypothalamus in the three most submissive animals resulted in a rise in their dominance ranks on the food test with no change in performance on the avoidance.

#### Division 5 and Psychometric Society. Symposium: New Developments in Mathematical Psychology

2:00-3:50. The Assembly, Sherman

CLYDE COOMBS, *University of Michigan*, Chairman

## Participants:

- WILLIAM ESTES, *Indiana University*. Mathematical learning theory.
- BERT F. GREEN, *Massachusetts Institute of Technology*. Computer models for cognitive processes.
- HAROLD O. GULLIKSEN, *Princeton University*. Scaling and learning theory.
- LEON FESTINGER, *Stanford University*. Cautions and comments.

**Division 14. Symposium: On-the-Job Criteria: Rational Issues**

2:00-3:50. Crystal Room, Sherman

ROBERT L. THORNDIKE, *Teachers College, Columbia University*, Chairman

## Participants:

- ROBERT L. THORNDIKE, *Teachers College, Columbia University*. Ten thousand careers and criteria.
- GLENN L. BRYAN, *Office of Naval Research*. Measurement of task performances.
- STANLEY E. SEASHORE, *University of Michigan*. Relationships among criteria of job performance.
- DAVID KIPNIS, *United States Naval Personnel Research Field Activity*. What can supervisors evaluate?
- SEYMOUR LEVY, *Pillsbury Company*. Supervisory effectiveness and criterion relationships.
- ALBERT S. GLICKMAN, *United States Naval Personnel Research Field Activity*. Prediction of successive and interdependent criteria.

**Divisions 19 and 21. Symposium: Operator Load and Capacity Problems in Information Processing Systems**

2:00-3:50. Cotillion Room, Morrison

JOHN D. FORD, JR., *System Development Corporation*, Chairman

## Participants:

- RICHARD A. BEHAN AND JAMES N. BUMPUS, *Thompson Ramo-Wooldridge Corporation*. An experimental investigation of the interaction between problem load and level of training.
- CHARLES M. HARSH, *United States Naval Electronics Laboratory*. Methods of enhancing operator capability.
- JOHN D. FORD, JR. AND ROBERT V. KATTER, *System Development Corporation*. Operator tactics for reducing load.
- BERT WOLIN, *System Development Corporation*. What is operator work load?
- Discussant: PAUL M. FITTS, *University of Michigan*.

**Divisions 1 and 3. Symposium: Exploratory Behavior and Response to Novel Stimuli: Recent Developments**

3:00-4:50. Venetian Room, Morrison

MURRAY GLANZER, *Walter Reed Army Institute of Research*, Chairman

## Participants:

- DANIEL E. BERLYNE, *National Institute of Mental Health*. Collative variables and arousal.
- WILLIAM N. DEMBER, *University of Cincinnati*. Alternation and exploration as indicator responses.
- DAVID PREMACK, *University of Missouri*. Familiar stimuli as novel reinforcers.
- WALLACE I. WELKER, *University of Wisconsin*. Ontogeny of exploratory behavior.
- Discussants: MELVIN H. MARX, *University of Missouri*.

**Division 3. Discussion: Mathematical Models in Experimental Psychology**

3:00-3:50. Parlor D, Morrison

FRANK RESTLE, *Michigan State University*, Chairman

An open invitation to attend and contribute.

**Division 3. Brain Damage and Learning**

3:00-4:50. Parlor B, Morrison

BRENDA A. MILNER, *McGill University*, Chairman

3:00. Effect of frontal lesions on reactions to punishment and on learning-set formation in the squirrel monkey. RAYMOND C. MILES, *University of Alberta*.

The punishment procedure investigated the purported relationship between frontal cortex and affective behavior. In six squirrel monkeys a rewarded reaching response was occasionally punished with a slap on the hand. Prolonged postpunishment response latencies which occurred during preoperative testing showed a marked diminution following surgery (bilateral removal of frontal granular cortex), indicating frontal area involvement with emotional behavior. Four subjects were postoperatively tested on a learning-set procedure consisting of 1,000 independent six-trial discrimination problems. When their records were compared with performances of three "non-operated" subjects, there was no significant difference between the two groups. Data were related to "mass action" and "equipotentiality" concepts.

- 3:10. Effects of medial temporal lesions on delayed reactions. R. E. CORRELL AND W. B. SCOVILLE, *Hartford Hospital*.

The effects of bilateral lesions of the medial temporal lobe structures (uncus, amygdala, hippocampus, hippocampal gyrus) on learning and retention of ten-second delayed response (DR) and five-second delayed alternation (DA) were studied in a series of 15 rhesus monkeys. Retention of preoperatively learned DR and DA was not impaired. Postoperative new learning of DR and DA was impaired. There was a more severe deficit on DA than on DR. The deficit on DA was most severe when DR was learned first. Implications for the role of the temporal lobe in memory function are discussed.

- 3:20. Reversal learning by cats with prestriate and orbitofrontal lesions. HELEN B. WARREN AND J. M. WARREN, *Yerkes Laboratories of Primate Biology*.

Ten normal cats, six with lesions in the suprasylvian gyrus (Prestriates) and eight with lesions in gyrus prorus (Frontals), were tested on 30 reversals of a discrimination habit based on combined visual and positional cues. Both groups of operated animals were significantly inferior to the normal controls on Reversals 1 through 15. The Frontals, but not the Prestriates, were also significantly inferior to the Controls on Reversals 16 through 30. It was concluded that both lesions impair serial reversal learning, but the impairment resulting from orbitofrontal lesions is more persistent. Similar losses in reversal learning are observed in primates.

- 3:30. Intermanual transfer in split-brain monkeys after somatic cortical ablation. MITCHELL GLICKSTEIN AND R. W. SPERRY, *California Institute of Technology*.

A previous study reported that callosus section tends to block the normally strong intermanual transfer of somesthetic discriminations in monkeys, but that such discriminations may transfer in a minority of cases. To test whether this transfer could be forced by unilateral cortical ablation, two monkeys were used that had previously exhibited no transfer even after extensive overtraining. Somatic arm Area I was ablated unilaterally, and after recovery, subjects were trained to perform new tactile problems and tested for transfer. Both monkeys now exhibited high-level transfer. Results confirm the capacity for intermanual transfer in split-brain monkeys and suggest mediation via ipsilateral somesthetic projections.

- 3:40. Delayed object-quality discrimination in hemispherectomized monkeys. DONALD C. KRUPER, ROBERT A. PATTON, AND YALE D. KOSKOFF, *University of Pittsburgh and Montefiore Hospital, Pittsburgh, Pennsylvania*.

Five hemispherectomized and five normal monkeys were tested on a delayed object-quality task (DOQ), using randomly presented intertrial delays of 20, 40, 80, and 120 seconds. Although the normal subjects performed significantly better on the overall scores, significant group differences occurred on only 40- and 80-second scores. Separate interval scores, within the same groups, showed the following relationships to the 20-second scores: (a) lower performance on all longer intervals by the operated group and (b) lower performance on only the 120-second interval by the normal group. DOQ performance was lower as a function of the delay variable, more for the operated than for the normal subjects.

- 3:50. Simultaneous learning of two conflicting problems by split-brain monkeys. COLWYN B. TREVARTHEN, *California Institute of Technology*. (Sponsor, Roger W. Sperry)

It has been shown that conflicting visual discrimination habits can be established in right and left hemispheres of the split-brain monkey (corpus callosum, optic chiasma, and anterior commissure cut) by serial or concurrent training of separate eyes. Polarized light techniques were here employed to test if the two separate and opposing discriminations could be learned simultaneously, i.e., with each trial contributing to the learning in both hemispheres. Superimposed patterns of polarized light were back-projected on two plastic screens viewed through polarizing filters, one for each eye, oriented at right angles to each other. Results show a tendency for one dominant hemisphere to learn at the expense of the other, but in some cases there is indication that both learn simultaneously.

- 4:00. The effects of hemispherectomy on the solution of the oddity problem by monkeys. STEPHEN A. KUSHNICK AND CARL E. WEDEKIND, *Montefiore Hospital, Pittsburgh, Pennsylvania, and the University of Pittsburgh*.

Four object-quality trained hemispherectomized rhesus monkeys were trained in the standard oddity procedure, in order to evaluate the effects of this operation on the "abstract" abilities in monkeys. The data demonstrated that hemispherectomy produced no significant impairment in oddity learning. Descriptive comparisons of the data with that of normal monkeys and other brain lesion groups demonstrated that performance by hemispherectomies was similar

to unilateral occipital lobectomized monkeys, which, as described in the literature, do not differ significantly from normals. Deviations from standard surgery and hemianopsia are discussed as possible contributors to the slightly lower performance trends evidenced in hemispherectomized monkeys as compared to normals.

- 4:10. The effect of radical hippocampal ablation on acquisition of avoidance response. ROBERT L. ISAACSON, ROBERT J. DOUGLAS, AND R. Y. MOORE, *University of Michigan and University of Chicago*.

Rats with extensive, but subtotal, bilateral hippocampal ablations learned a shuttle box avoidance problem more rapidly than did animals with control lesions in the cortex or normal animals. The hippocampal animals showed greater resistance to extinction and faster reconditioning rates than did animals in the other groups. These results are consistent with studies showing similar effects following lesions in the septal area and indicate that the hippocampus is not necessary for the formation or use of all "recent memories."

- 4:20. The relationship between paroxysmal EEG activity and performance on a vigilance task in epileptic patients. ALLAN F. MIRSKY, *National Institute of Mental Health*.

To investigate the possibility, suggested by previous work, that some types of EEG abnormality might be associated with errors on a visual vigilance task, but that other types would not, simultaneous recording of the EEG and behavior was made in 25 epileptic patients. Temporal and frontal lobe EEG abnormality was not associated with errors in performance. Errors did tend to occur in the presence of spike and wave abnormality, although the relationship between the behavior and the EEG patterns differed from patient to patient. The relationship between these findings and the apparently contradictory results of other workers are discussed.

#### Division 14. Symposium: Industrial Psychology in Developing Countries

3:00-4:50. Louis XVI Room, Sherman

FREDERIC R. WICKERT, *Michigan State University*,  
Chairman

##### Participants:

FREDERIC R. WICKERT, *Michigan State University*.  
Background and importance of industrial psychology in developing countries.

HARRY LAURENT, *Standard Oil Company of New Jersey*. Research on the assignment program for Saudi Arab employees.

ROBERT J. WOLFF, *Minnesota State Department of Public Welfare*. Research in the colonial Surinam government.

#### Division 19. Invited Address

3:00-3:50. Embassy and Burgundy Rooms, Morrison

WILSE B. WEBB, *University of Florida*, Chairman

ROBERT B. VOAS, *Space Task Group, National Aeronautics and Space Administration*. Psychological Aspects of Project Mercury.

#### Division 5. Prediction

4:00-4:50. Emerald Room, Sherman

MARILYN C. LEE, *Science Research Associates*,  
Chairman

- 4:00. Comparison between nonacademic predictors and traditional predictors of medical school success. LORRAINE D. EYDE AND ALICE L. PALUBINSKAS, *Tufts University*.

The Strong Vocational Interest Blank and a rating of fathers' occupational prestige as predictors of medical school success were compared with the traditional predictors, Medical College Admission Test scores and college science grades. The subjects were 103 first-year medical students. The criteria used for assessing the efficiency of the predictors were first-year medical school grades and peer nominations. The nonacademic predictors, occupational interests, and prestige of fathers' occupation succeeded almost as well as the traditional predictors.

- 4:12. Incompatible validity generalizations derived from cross-sectional and longitudinal selection techniques. JOHN W. EBERHARD, JAMES W. DANAHER, AND KENNETH W. COLMAN, *Courtney and Company, Philadelphia, Pennsylvania*.

Validation results for identical selection measures on two aircraft simulator operator groups were directly opposed. The samples consisted of experienced operators (cross-sectional) and newly-hired operators (longitudinal). Predictors were: a Civil Service Examination, the ten-test Employee Aptitude Survey (EAS), age, and education. A composite criterion was formed from several reliable and intercorrelated job performance ratings. One EAS test and years of



education significantly predicted experienced operator performance. However, the Civil Service Examination, five different EAS tests, and age significantly predicted newly-hired operator performance. Hence, no significant validity coefficients were common to both samples, although the simulators used were identical.

- 4:24. Clinical and statistical prediction: A more general approach. JACK SAWYER, *University of Chicago*.

The range of comparison between clinical-statistical prediction methods is extended four ways: by (a) classifying data by *mode of collection* (mechanical or nonmechanical) as well as mode of combination on the basis of the same criterion "Is the clinician involved?" thus removing the artificial limitation of nearly all existing studies, which merely compare different modes of *combining data*; (b) creating a cross-classification—by *mode of data collection and mode of data combination*—of six basic prediction methods; (c) deriving two general types of "syntheses" of clinical and statistical methods; and (d) specifying design considerations for the comprehensive comparison of clinical and statistical methods.

- 4:36. Development of a predictive academic interest inventory. ANDREW R. BAGGALEY, *University of Wisconsin, Milwaukee*.

In 1956-57 an interest inventory of 150 items was administered to 858 freshmen entering UWM. By the summer of 1959, 313 were still in school. Their responses and their majors were compared, and eight scales were assembled. Items were selected for which the percentage of "yes" responses by students in a given major differed significantly from that of students in all the other majors. A group of 833 students who entered in 1957-58 will serve as a cross-validation group. Since criterion data were collected considerably later than the responses, the scales have predictive rather than concurrent validity.

#### Division 5 and Psychometric Society. Psychometric Procedures II

4:00-4:50. Jade Room, Sherman

HENRY F. KAISER, *University of Illinois*, Chairman

- 4:00. A procedure for estimating test norms. RICHARD LEVINE AND DEAN SEIBEL, *Educational Testing Service*.

A stratified sampling technique based on assumptions similar to those commonly made in estimating the effects of univariate selection on bivariate distributions

is used to estimate a complete norms distribution for a reference group that has not actually taken the test. Stratification is on scores on a short test that is taken by the reference group and by a group that has taken the short test as well as the test for which norms are desired. Data comparing estimated national norms and obtained national norms for the Cooperative Test Division's School and College Ability Test are presented.

- 4:12. An upper bound of reliability for multiple choice tests. WILLIAM V. CLEMANS, *National Board of Medical Examiners*.

Formulas giving the "lower bound" of a reliability coefficient have been used by psychometricians for years. Formulas for an "upper bound" have also been available for years, but only for the case of homogeneous tests. A formula is developed that gives the maximum expected reliability of a test in terms of the test variance, the test mean, the number of items in the test, and the probability of answering a question correctly by chance. The formula does not depend on the assumption of test homogeneity. It does depend on the assumption that the "true" scores are distributed symmetrically.

- 4:24. An expansion upon Tucker's interbattery factor analysis. W. A. GIBSON, *Personnel Research Branch, Department of the Army*.

Recent findings have shown Tucker's interbattery factor analysis to make seldom satisfied implicit assumptions such that imaginary factor loadings may often result. An unknown linear transformation is needed to obtain a proper factor matrix. Envisioning a second interbattery solution, noncoincident with the first but involving the same factor space, permits, in conjunction with the first solution, an explicit expression in the unknown transformation. The second interbattery solution need never be found explicitly, the first need not be a principal axes solution, and communality estimation is avoided completely. A stringent example will be exhibited.

- 4:36. Effects upon the factorial solution of rotating varying numbers of factors. DONALD F. KIEL AND CHARLES WRIGLEY, *Michigan State University*.

This study utilizes analytic rotational procedures to compare solutions with different numbers of factors. The initial tendency when another factor is included in the rotation is for existing factors to subdivide, with addition of another interpretable factor. A point of stability is reached when rotation of a further factor results in no further acceptable factor (i.e., one on which at least two tests have their

highest loading). This point is proposed as a criterion for completeness of factor extraction. The resultant analysis can be reported in hierarchical form, with a table showing how the larger factors subdivide into smaller ones.

**Division 19. Symposium: The Role of the Social Sciences in Military Manpower Management**

4:00-5:50. Cotillion Room, Morrison

RUFUS C. BROWNING, *The Adjutant General's Office, Department of the Army*, Chairman

**Participants:**

EDGAR F. BORGATTA, *Cornell University*. Views of the social psychologist.

MORRIS JANOWITZ, *University of Michigan*. Views of the sociologist.

GEORGE S. PETTEE, *Operations Research Office, Johns Hopkins University*. Views of the political scientist.

EDWARD T. HALL, *Anthropology Consultant, Washington, D. C.* Views of the social anthropologist.

Discussant: F. J. MICHAELSON, *Continental Army Command, United States Army*.

**Division 19. Symposium: The Use of Computers for Psychological Research**

4:00-5:50. Burgundy Room, Morrison

JOHN E. COULSEN, *System Development Corporation*, Chairman

**Participants:**

BENJAMIN W. WHITE, *Massachusetts Institute of Technology*. The computer as a pattern generator for perceptual research.

HARRY F. SILBERMAN, *System Development Corporation*. A computer-controlled teaching machine.

A. PAUL HARE, *Haverford College*. Computer simulation of interaction in small groups.

WILLIAM MCPHEE AND EUGENE LINDSTROM, *Columbia University and International Business Machines*. Empirical inputs for a voting model.

Discussant: NANCY S. ANDERSON, *University of Maryland*.

**Division 21. Symposium: Human Factors Research in Space Vehicles and Missile Fields**

4:00-5:50. Grand Ballroom, Morrison

NEAL M. BURNS, *United States Naval Air Material Center*, Chairman

**Participants:**

RANDALL M. CHAMBERS, *United States Navy Aviation Medical Acceleration Laboratory*. Human performance capabilities in high G environments.

JACK HUFFNER, *Nuclear Products-Erco*. A general purpose facility for human factors research.

ARTHUR I. SIEGEL, *Applied Psychological Services*. Some applications and investigations of a psychological nature for space and orbital vehicles.

BERTRAM J. SMITH, *General Electric Company*. Design for measurement of effect of space on primary abilities.

J. C. TOWNSEND, *Catholic University*. Decision making problems in space flight.

**APA. Conversation-Contact Hour**

5:00-5:50. Parlor D, Morrison

ORLO L. CRISSEY, *General Motors Institute*, Leader

5:00-5:50. Parlor B, Morrison

JACK W. DUNLAP, *Dunlap and Associates, Inc.*, Leader

5:00-5:50. Parlor C, Morrison

B. F. SKINNER, *Harvard University*, Leader

**TUESDAY EVENING, SEPTEMBER 6**

**APA. Conversation-Contact Hour**

6:00-6:50. Parlor D, Morrison

RENSIS LIKERT, *University of Michigan*, Leader

6:00-6:50. Parlor C, Morrison

WALTER F. GREYER, *United States Air Force Aero Medical Laboratory, Dayton, Ohio*, Leader

6:00-6:50. Parlor B, Morrison

GEORGE K. BENNETT, *Psychological Corporation*, Leader

**Division 19. Invited Addresses: Top Management Views of Psychological Research**

8:00-9:50. Grand Ballroom, Morrison

THEODORE R. VALLANCE, *Human Resources Research Office*; AND HOWARD E. PAGE, *National Science Foundation*, Chairmen

ARTHUR G. TRUDEAU, *Chief of Research and Development, United States Army*. Modern Man and the Battlefield.

L. L. FERGUSON, *Behavioral Research Service, General Electric Company*. Current and Projected Needs and Opportunities for Psychological Research in the General Electric Company.

### WEDNESDAY MORNING, SEPTEMBER 7

#### Division 1. Invited Address

9:00-9:50. Venetian Room, Morrison

NORWOOD R. HANSON, *University of Indiana and St. John's College, Cambridge*. Psychology among the Sciences.

#### Division 3. Comparative Psychology

9:00-9:50. Parlor B, Morrison

DOROTHY RETHLINGSHAFFER, *University of Florida*,  
Chairman

9:00. The porpoises' detection of invisible objects.  
W. N. KELLOGG, *Florida State University, Tallahassee*.

Using the discrimination method, porpoises were tested to determine (a) whether they could distinguish a food fish from a second similar fish concealed behind plate glass. They were also required (b) to swim through one of two apertures, one of which was blocked by a heavy sheet of clear plexiglas. The stimulus choices were randomly rotated in each experiment. The discriminations were 100% correct in Experiment I and 98% correct in Experiment II. The animals' sound signals, observed by means of underwater listening gear, increased markedly during the process of making a discrimination.

9:10. Studies of visual depth perception: II. Avoidance reaction as an indicator response in chicks.  
ROBERT FISHMAN AND ROBERT B. TALLARICO,  
*University of Miami*.

The experiment dealt with an avoidance reaction to a rapidly approaching object to the single eye of a chick as a possible indicator of innate depth perception. Kimberley chicks, 156, were used. Statistical comparisons within light-reared and within dark-reared groups were significant at the .04 level or lower. It was concluded that the feigned-poke groups showed significantly more avoidance reactions than control groups. No significant differences were found between light-reared and dark-reared feigned-poke groups in the first or second replication. These results tend to support Gibson's theory of innate depth perception.

9:20. Imprinting as a function of arousal. GORDON F. FITZ AND RICHARD B. ROSS, *Carnegie Institute of Technology*. (Sponsor, K. E. Moyer)

The differences between imprinting and learning reported in previous studies may be explained in terms of differing effects of CNS arousal upon the two processes. The decrement found in learning with a high level of arousal apparently does not occur in imprinting. Sounding a loud clapper whenever chicks approached a moving stimulus produced more following of the stimulus than was found with control animals. It is suggested that the noise acted as an arousal device, facilitating fixation of the stimulus and imprinting to it.

9:30. Imprinting with visual flicker: Effects of testosterone cyclopentylpropionate. H. JAMES, *Queen's University, Canada*.

Three experiments are reported on the effects of a long acting androgen (testosterone cyclopentylpropionate, TCP) on the newly hatched chick's response to visual flicker. Within a certain critical period, untreated chicks will rapidly learn to approach and stay near an intermittent light source and will follow an object which has previously been associated with this stimulus. The results of these experiments indicate that the ability of 24-hour-old chicks to acquire this response is unaffected by a single injection of 5 mg. TCP, whereas the same dosage injected in naive 3-day-old chicks significantly depresses their responsiveness to visual flicker.

#### Division 3. Human Motivation

9:00-9:50. Cotillion Room, Morrison

MELVIN MARX, *University of Missouri*, Chairman

9:00. Sound intensity (drive) and verbal learning.  
HERBERT LEVITT, *University of Massachusetts*.

The effects of intense sound and selected task variables on verbal learning were investigated. Ninety-six student women had ten trials to learn four pairs of nonsense syllables. Combinations of the task variables—similarity and association values—resulted in a spread of difficulty greater than that previously reported. The task variables influenced correct responses in expected directions despite the use of a group administration procedure. Contrary to the common sense notion of sound as a distractor, the continuous intense sound had no statistical effects on performance. The sound was conceptualized as a drive, and two opposing theoretical formulations were considered.

- 9:10. Avoidance conditioning of verbal behavior and differential effects on recall. JOSEPH J. TECCE, WILLIAM D. COMMIN, AND WALTER J. SMITH, *Catholic University of America*.

A modified form of the word association technique was used to test several implications of reinforcement theory for avoidance conditioning of verbal behavior. Results: For immediate recall, response occurrence was significantly less for shocked associations than for nonshocked ones, and this difference was independent of "insight" into the experiment. The difference in immediate recall was associated with removal of the source of punishment. A comparison between immediate and 24-hour recall scores indicated a significant increase for shocked responses but not for nonshocked. These findings are discussed with regard to their implications for reinforcement theory and as an experimental analogue of repression.

- 9:20. Variables influencing learning in a minimal social situation. JOSEPH SIDOWSKI, ANNE KOSTANZER, HAROLD NAUMOFF, AND MANUEL SMITH, *San Diego State College*.

Two subjects, isolated from each other, were provided with push buttons by means of which each could give the other reward (score) or punishment (shock). Learning to give each other scores was found to be a function of: (a) differential influence of reward and punishment; (b) sex (female-female pairs being superior to male-female, or male-male); (c) amount of social information, with subjects introduced to or told sex of partner being superior to pairs who did not receive this information. Questioning at conclusion of session indicated most subjects refusing to believe that a second subject was actually involved, in spite of significant sex and social information variables.

- 9:30. Requested emotions in the wake and the hypnotic states. ESTHER HELFMAN, RONALD E. SHOR, AND MARTIN T. ORNE, *Massachusetts Mental Health Center, Boston*.

It has been claimed that hypnosis facilitates the induction of emotion. This study investigates the question of whether subjects who are fully awake can also yield autonomic evidence of "induced" or requested emotion. Seventeen subjects were attached to a polygraph and were asked to "feel" four emotions. A "real-fake" design was used, and subjects were tested in both the wake and hypnotic (or pseudohypnotic) states. The heart rate and GSR potential variables have been analyzed. The results indicate that subjects in the wake state can also produce autonomic evidence for "induced" emotions. It is maintained that formerly accepted evidence for

the facilitation of induced emotion by hypnosis be re-evaluated.

#### Division 5. Symposium: Interactions in Psychometrics and Experimentation

9:00-10:50. Crystal Room, Sherman

JULIAN C. STANLEY, *University of Wisconsin*,  
Chairman

##### Participants:

MARILYN C. LEE, *Science Research Associates*. Interactions, configurations, and nonlinear models.

ARDIE LUBIN, *Walter Reed Institute of Research*. Some difficulties in using multiple treatment design.

RAYMOND O. COLLIER, JR., *University of Minnesota*. The effects of treatment-subject interaction in a randomized block, two factor experiment.

SAMUEL T. MAYO, *Loyola University, Chicago*. Interactions among categorical variables.

#### Divisions 5 and 8. Symposium: The Nature and Measurement of Response Sets in Personality Assessment

9:00-10:50. The Assembly, Sherman

ARTHUR H. BRAYFIELD, *Pennsylvania State University*, Chairman

##### Participants:

SAMUEL MESSICK, *Educational Testing Service*. Response style and content measures from personality inventories.

IRWIN A. BERG, *Louisiana State University*. The deviation hypothesis revisited.

LEE SECHREST AND DOUGLAS N. JACKSON, *Northwestern University and Pennsylvania State University*. Deviant response tendencies: Their measurement and interpretation.

Discussant: BENNO G. FRICKE, *University of Michigan*.

#### Division 14. Symposium: Psychological Evaluation as a Guide to Executive Development

9:00-10:50. Old Chicago Room, Sherman

FREDERICK GEHLMANN, *A. T. Kearney and Company*, Chairman

##### Participants:

HENRY D. MEYER, *Jewel Tea Company, Inc.* The use of evaluations in the development of junior management personnel.



JAMES A. DOUCETTE, *Raytheon Manufacturing Company*. The use of psychological evaluations with senior executives.

PAUL F. ROSS, *Standard Oil Company of New Jersey*. Developmental factors emphasized by research on the early identification of executive talent.

ROBERT O. SHAFFER, *Rohrer, Hibler, and Replogle*. Developmental counseling vs. developmental evaluations.

V. J. BENTZ, *Sears, Roebuck and Company*. Relating job performance and psychological evaluation information in the development of executives.

ROBERT D. KELLY, *A. T. Kearney and Company*. The influence of organizational climate on the value of evaluations.

#### Division 14. Symposium: Psychological Services in Industry

9:00-9:50. Louis XVI Room, Sherman

ROBERT FINKLE, *Metropolitan Life Insurance Company*, Chairman

##### Participants:

ARNOLD B. WOHLKE, *International Business Machines Corporation*. Background of the psychological services offered at IBM-Kingston.

ROYAL J. HASKELL, *International Business Machines Corporation*. Practices of the psychological services offered at IBM-Kingston.

#### Division 19. Selection and Training

9:00-9:50. Burgundy Room, Morrison

LEROY D. PIGG, *United States Air Force Behavioral Sciences Laboratory*, Chairman

9:00. Validation of the Army Night Seeing Tester. ROLAND H. TANCK AND HAROLD MARTINEK, *Personnel Research Branch, Department of the Army*.

The Army Night Seeing Tester (ANST) was developed by the Personnel Research Branch, TAGO, to classify personnel according to their ability to see at low levels of illumination. To determine its effectiveness, three validation studies involving night problems simulating different military operations were conducted. In all studies, Army enlisted men were tested with the ANST, and high and low scorers were selected to take part in the night field problems used as criterion measures. Common military objects were used as visual targets in all night field problems, but the method of presentation and the scoring procedure differed. The validity of the ANST was

demonstrated in all three studies, and its usefulness as a personnel selection and assignment device was suggested.

9:10. Development and validation of a battery for predicting suitability for Special Forces. RUDOLPH G. BERKHOUSE AND MILTON H. MAIER, *Personnel Research Branch, Department of the Army*.

Special Forces personnel are infantry-type troops who volunteer to jump behind enemy lines in uniform in wartime for the purpose of organizing and training guerilla forces. The purpose of the study was to develop and validate a battery of measures for predicting suitability for the Special Forces type of assignment. The criterion measure consisted of a comprehensive performance situation in which the subjects were required to demonstrate their proficiency in handling nine different tasks, such as handling weapons and demolitions and carrying out raids and ambushes. Ten experimental predictors in addition to the Army Classification Battery were administered to a sample of 250 enlisted personnel with general ability scores above the 30 percentile. A battery of four predictors was selected as a result of a validation study. The multiple correlation coefficient was .63.

9:20. The effectiveness of integrated air crew simulator training for B-52 transition crews. RICHARD T. CAVE AND RICHARD L. KRUMM, *Aerospace Medical Laboratory and American Institute for Research*.

The value of integrated training using a linkage of the B-52 flight simulator and T-2A Radar trainer was studied using 75 B-52 student transition crews. Flight line ratings, simulator check lists, crew attitude scales, and analysis of verbal communication were the evaluation techniques used in a comparison of the 37 experimental and 38 control crews. Two integrated simulator training missions were completed by the experimental group, while the control group took the standard course. All crews flew the final simulated integrated mission. It was concluded that proper integration of flight simulators in an integrated configuration results in an appreciable improvement in crew coordination skills.

9:30. Automatic programing and recording in training equipment: A case history and some implications. ALLAN M. STAVE, *Aerospace Medical Laboratory*. (Sponsor, William B. Askren)

The paper describes a B-52 gunnery trainer featuring automatic programing and recording. Automatic

programing was accomplished by using motion picture film controlling television and radar presentations. Automatic recording was accomplished through the use of timing devices and ink tracings which recorded student reaction times, target ranges, and weighted error scores. Historical inspection of Air Force training equipment revealed a trend toward automaticity of which this device is an advanced example. Completely automatic training devices have been considered impractical, but the recent invention of self-programing computers may have removed the largest obstacle to their development.

### Division 1. Symposium: Word Frequency as a Variable in Behavioral Studies

10:00-11:50. Venetian Room, Morrison

HERBERT RUBENSTEIN, *Air Force Cambridge Research Center, Bedford, Massachusetts*,  
Chairman

#### Participants:

NORMAN GESCHWIND, *VA Hospital, Boston, Massachusetts*. Studies of word frequency in aphasics.

ISRAEL GOLDAMOND, *Southern Illinois University*. Word frequency, accuracy of recognition, and conditioning.

DAVIS HOWES, *Massachusetts Institute of Technology*. The nature of the word-frequency variable in perception and association.

PAUL I. JACOBS AND LAWRENCE M. STOLUROW, *University of Illinois*. Word frequency: Relationships with meaningfulness and learning rate.

HERBERT RUBENSTEIN, *Air Force Cambridge Research Center*. Word frequency, reaction time, and speech intelligibility.

Discussant: W. C. H. PRENTICE, *Swarthmore College*.

### Division 3. Somatic Processes

10:00-10:50. Cotillion Room, Morrison

ROBERT S. DANIEL, *University of Missouri*,  
Chairman

10:00. Retroactive effects of ECS on maze learning of maze bright and maze dull rats. CALVIN W. THOMSON, JAMES L. MCGAUGH, AND CHARLES E. SMITH, *San Jose State College*.

This study investigated the possible disruptive effects of ECS on the maze learning of two strains of rats previously shown to differ in learning ability. Groups within each of the two strains were given no shock, ECS at 45 sec., and ECS at 30 min. post-

training trial intervals. Results indicated significant strain differences and ECS effects. The strain differences were found only under the ECS disruptive conditions. The study suggests that strain differences in learning ability are due to differences in rate and duration of posttraining trial perseverative activity.

10:10. Motor functions in fetally irradiated rats.

ERNEST FURCHTGOTT, MAGILL ECHOLS, AND JAMES DEES, *University of Tennessee*.

Locomotor coordination was tested in fetally irradiated rats while they were at the ages of 26 and 51 days. Significant deficits in the irradiated subjects were observed at both age levels, with a tendency for an increased difference at the later age. Broad jumping was tested at the ages of 31, 65, and 270 days. Again the irradiated subjects showed a permanent deficit. However, these changes did not increase with age. These findings are consistent with other behavioral characteristics in these animals and with neurohistological findings.

10:20. Effects of task difficulty on muscular tension level and performance during rotary pursuit.

ROBERT G. EASON, CARROLL T. WHITE, AND ROSS BIGNELL, *United States Navy Electronics Laboratory and San Diego State College*.

The relationships which exist between muscular tension, performance, and task difficulty during rotary pursuit were investigated. Each of three subjects performed 20 100-sec. tracking trials on six different rotary pursuit targets of varying size, during which time the integrated EMG of four skeletal muscles and time-on-target measures were obtained every 10 seconds. The EMG was found to vary inversely, and performance directly, with the log. of the target area. Thus, muscular tension and performance are inversely related. Muscular tension is directly related to target difficulty, which varies inversely with the log. of the target area.

10:30. Changes in finger volume during a simple addition task. RICHARD N. BERRY, *Indiana University*.

Decrements in finger volume were measured during a simple, paced addition task. Each of 29 male undergraduate subjects received one of three main orders of presentation of 26 addition problems. Median values for the finger volume for each successive problem showed a significant decrement in volume from the first to the last problem. Further, and more importantly, the rank-order correlation between a measure of the overall amount of constriction and the number of correct answers was .51 ( $p < .01$ ). It is concluded that vasoconstriction in the finger relates positively

and significantly to performance in a simple task situation.

### Division 3. Symposium: Perceptual Constancy: Some Problems and Approaches

10:00-11:50. Parlor B, Morrison

ROBERT C. BOLLES, *Hollins College*, Chairman

#### Participants:

HERSCHEL W. LEIBOWITZ, *University of Wisconsin*. A consideration of the mechanisms underlying perceptual constancy.

VIRGIL R. CARLSON, *National Institute of Mental Health*. Apparent size, apparent distance, and real confusion.

ALBERTA S. GILINSKY, *Kenyon and Eckhardt*. Let us get perception back into psychology.

Discussants: DONALD A. RILEY, *University of California*; AND ROBERT C. BOLLES, *Hollins College*.

### Division 14. Symposium: Facilitating Change in a Large Organization

10:00-11:50. Louis XVI Room, Sherman

PAUL C. BUCHANAN, *Esso Standard Oil Company*, Chairman

Participants: MICHAEL G. BLANSFIELD, *Pacific Finance Corporation*; ROBERT H. GUEST, *Institute of Human Relations, Yale University*; AND HERBERT A. SHEPARD, *Case Institute of Technology*.

### Division 19. Symposium: Man-Machine Systems: Research, Design, and Utilization

10:00-11:50. Grand Ballroom, Morrison

ROBERT B. MILLER, *International Business Machines*, Chairman

#### Participants:

ROBERT L. CHAPMAN, *Ramo-Wooldridge Corporation*. System simulation.

DANIEL HOWLAND, *Ohio State University*. System theory.

GUSTAVE J. RATH, *Admiral Corporation*. Sub-system problems.

JEROME H. ELY, *Dunlap and Associates*. Man-machine systems: The future.

### Division 3. GSR Autonomic Conditioning

11:00-11:50. Cotillion Room, Morrison

ARNOLD GERALL, *University of Kansas*, Chairman

11:00. Empathic conditioning and its relation to anxiety level. CHARLES F. HANER AND ELLSWORTH R. WHITNEY, *Grinnell College and University of California*.

Subjects varying in anxiety (Taylor MAS) observed another subject, confederate of the experimenter, who was presumably being conditioned using light as conditioned stimulus—shock to finger as the unconditioned stimulus and the galvanic skin response as the conditioned response. Actually the observer subject was hooked to the galvanometer (under a pretext) rather than the fake subject. All observer subjects appeared to condition and subsequently extinguish as the fake subject put on an act of conditioning and extinguishing finger withdrawal. High anxiety subjects responded in a greater degree than did low anxiety ones during the final trials of both the conditioning and extinction trials.

11:10. The effects of reinforcement, feasibility, and disparity on autonomic conditioning. WILLIAM W. GRINGS, SIDNEY CARLIN, AND MORTIMER H. APPLEZWEIG, *University of Southern California and Connecticut College*.

Several hypotheses concerning stimulus relationships in conditioning human GSRs and digital blood volume changes were tested. A class of cues intrinsically suggesting stimulation was reinforced. This led to a perceptual response tendency (to expect stimulation) on a cue not so reinforced (but capable of suggesting stimulation). Response varied with the perceived feasibility of the cue to actually be reinforced and was a function of the number of reinforcements of the stimulus class. Anticipatory responses decreased (adapted) with successive reinforcements; whereas strength of set (to expect stimulation), as inferred from response magnitude on a disparity trial, increased with greater numbers of reinforcements.

11:20. Strength of conditioning and intensity of the conditioned stimulus. H. D. KIMMEL, FRANCES A. HILL, AND M. C. MORROW, *University of Florida*.

This study investigated the relationship between CS intensity (a 1,000 cps tone) and strength of conditioning, using two different response measures (speed of finger withdrawal from an electric shock UCS and magnitude of the galvanic skin response). Sixty-three students were subjects. A factorial arrangement of acquisition and extinction CS intensities was used. The acquisition CSs were 13, 18, 23, 28, 33, 38, and 43 db., and the extinction CSs were 13, 28, and 43 db. The GSR and withdrawal data showed opposite results. Average GSR was inversely

related to the intensity of the CS, but average latency of finger withdrawal was positively related to CS intensity. The results were interpreted to support earlier findings using a longer CS-UCS interval showing that intensity of CS is a basic parameter of strength of conditioning.

11:30. Resistance to extinction as a function of temporal relations during sensory preconditioning. DELOS D. WICKENS AND HENRY A. CROSS, *Ohio State University and University of Wisconsin.*

The senior author found that elements of stimulus complexes acquire response strength as a function of differences between the two elements in onset time. The results were similar to the CS-UCS inter-stimulus interval data obtained by conditioning to a single stimulus. The data suggest that sensory conditioning between the two elements occurred. This result, however, might be attributed to secondary reinforcement. The present experiment employed a sensory preconditioning design, using different onset time intervals in preconditioning, thus eliminating secondary reinforcement. The results are similar to those of the former experiment, suggesting that reinforcement is not necessary for sensory conditioning.

#### Division 5 and Psychometric Society. Invited Address

11:00-11:50. Bal Tabarin, Sherman

J. P. GUILFORD, *University of Southern California.*  
Psychometric Progress: A Review of the Past Twenty-Five Years.

#### Division 14. Symposium: Factors Involved in Predicting Consumer Acceptance for New Automobiles

11:00-12:50. Old Chicago Room, Sherman

HOWARD D. HADLEY, *Hadley Research Associates,*  
Chairman

Participants: GEORGE H. BROWN, *Ford Motor Company;* LOUIS CHESKIN, *Color Research Institute;* BURLEIGH B. GARDNER, *Social Research, Inc.;* AND ROBERT L. FRENCH, *Psychological Corporation.*

### WEDNESDAY AFTERNOON, SEPTEMBER 7

#### Division 3. Mathematical Models

12:00-12:50. Parlor B, Morrison

WARD EDWARDS, *University of Michigan,* Chairman

12:00. Mixed strategies in  $2 \times 2$  matrix games.

DONALD L. ZINK, *Aerospace Medical Laboratory.* (Sponsor, Charles A. Baker)

This study investigated the strategies chosen by subjects when playing two-person zero-sum  $2 \times 2$  matrix games having mixed strategy solutions. Six pairs of subjects each played three different games for 400 trials. These games had the same minimax solutions, but differed in their expected values. While overall deviations from the minimax solutions were not different for the three games, the extent and direction of individual deviations varied greatly as a function of value. A model using variance preferences, value of the game, and the opponent's strategy as independent variables is presented that accounted for these individual variations in strategies used.

12:10. Keeping track of variables that have few or many states. DOUWE B. YNTEMA AND GAYLE E. MUESER, *Massachusetts Institute of Technology.*

The task is remembering the present states of several variables. If scores are corrected for guessing, the number of states that the variables may assume has little or no effect on performance. This result is compared to the somewhat similar findings on the number of items in the memory span.

12:20. Application of a mathematical model of learning to discrimination reversal learning under conditions of probabilistic reinforcement. ALVIN J. NORTH AND SELBY EVANS, *Southern Methodist University.*

To apply and test one of Bush and Mosteller's stochastic models for learning, albino rats were given a series of position discrimination problems, using an 80:20 reinforcement schedule, and reversing the conditions of reinforcement whenever a criterion of learning had been attained. The model for experimenter-subject-controlled events was used. Simplifying assumptions required that only one parameter be estimated and that the probability of applying the four linear operators was theoretically known. The model was applied to certain individual subjects (pooling problems) and to certain problems (pooling rats). Goodness of fit was satisfactory for individuals; less so for problems.

12:30. A decision making model for learning. ROBERT RADLOW AND SIDNEY SIEGEL, *Pennsylvania State University.*

A unified model for learning, which integrates the Estes and Bush-Mosteller statistical learning approach to choice behavior with the decision making approach of Siegel, provides predictions for the two-



choice situation, covering the entire course of learning for any condition of reinforcement. A family of learning curves may be derived for each value of  $\pi$  (the probability of the more frequent stimulus event), describing response acquisition. Choices made by 20 subjects under the "no payoff" condition were employed in predicting the choices of another 20 subjects run under "risk." The results support the predictions of the model.

### Division 5. Factor Analyses of Ratings

12:00-12:50. Jade Room, Sherman

JOSEPH R. ROYCE, *University of Redlands*, Chairman

12:00. A confirmation of nine postulated psychotic syndromes. MAURICE LORR, DOUGLAS M. MCNAIR, C. JAMES KLETT, AND J. J. LASKY, *Veterans Administration, Washington, D. C., and Perry Point, Maryland*.

The aim of the study was to test for the presence of nine postulated psychotic syndromes in an inpatient multidimensional psychiatric scale (IMPS). Some 296 patients from 47 hospitals were interviewed. Each patient was rated on the 90-variable rating schedule. Seventy-seven variables were intercorrelated and nine hypothecated clusters extracted. Subsequently four second-order factors were isolated. The analysis completely confirmed the postulated patterns labeled Excitement, Withdrawal, Paranoid Projection, Hostile Belligerence, Agitated Depression, Perceptual Distortion, Motor Disturbances, Grandiosity, and Conceptual Disorganization. Thus nine psychotic syndromes may be measured in an ordinary psychiatric interview.

12:10. Discriminant validity of a peer-rating measure of aggression. THOMAS J. BANTA AND LEOPOLD O. WALDER, *Rip Van Winkle Foundation, Hudson, New York*.

Factorially homogeneous and reliable peer ratings have been developed for a study of aggression in third grade children. The present factorial study was undertaken to examine the discriminant validity of this technique. Items from the original homogeneous pool representing unprovoked aggression were used along with three other types of items (a total of 32): provoked or retaliatory aggression, socially undesirable nonaggression, and socially desirable nonaggression. Three distinct clusters of items were identified: provoked and unprovoked aggression, socially undesirable behavior involving no interpersonal harm, and socially desirable behaviors. Implications for our original definition of aggression and suggestions for related experimental and field studies are discussed.

12:20. A comparison of the factored dimensions of peer and superior ratings on a situational-type rating scale of intellectual aptitude. ALVIN MARKS, WILLIAM B. MICHAEL, AND HENRY F. KAISER, *Los Angeles State College, University of Southern California, and University of Illinois*.

For a scale consisting of 48 situational-type items that were hypothesized to represent 12 factors judged to be related to military leadership, intercorrelations of ratings for 204 Marine Corps officers were obtained from two populations of peer and superior raters. From the factor analyses of the two correlation matrices 9 and 10 factors were identified of which those of verbal comprehension, leadership, originality, ideational fluency, penetration, and field capability appeared in each matrix. It would seem that for the same rating scale fairly comparable factorial solutions can be realized irrespective of differences in populations of peer and superior raters.

12:30. The dimensions of effective stenographic performance. RICHARD M. JOHNSON, WILLIAM G. MOLLENKOFF, AND DON J. COSGROVE, *Proctor & Gamble Company*.

A 38-item rating scale was constructed from items which supervisors of stenographers felt were important in describing effective stenographic performance. Two groups of stenographers were rated, and the items separately intercorrelated and factored. The two sets of data were independently rotated, both graphically and by a machine-programed method. All four rotations were in striking agreement, revealing three correlated factors which were named Accuracy, Resourcefulness and Flexibility, and Attitude toward Work. Corresponding factor scores have a multiple correlation of .84 with an "over-all" rating, indicating that together they account for a large proportion of the over-all variance.

### Division 5 and Psychometric Society. Data Models

12:00-12:50. Crystal Room, Sherman

ARDIE LUBIN, *Walter Reed Army Institute of Research*, Chairman

12:00. Adverb-adjective combination in overseas groups. NORMAN CLIFF, *Educational Testing Service*.

Three groups of subjects—one British, one French, and one Australian—rated 150 combinations of intensive adverbs with evaluative adjectives on an 11-point scale of favorableness. The stimuli were scaled by the method of successive intervals, and the hypothesis of

a multiplicative combinatory rule was tested. As was previously found with American subjects, the hypothesis was substantiated to a very close approximation. Some notable differences between the British and French groups and the American in the multiplicative effect of particular adverbs was observed. A previously-noted departure of data from the model was again found.

- 12:10. The prediction of choice under alternative models for contingent and compound paired comparisons. JAMES J. McKEON, EMIR H. SHUFORD, AND R. DARRELL BOCK, *University of North Carolina*.

Choice models based upon the law of comparative judgment and the Bradley-Terry-Luce model are compared on the basis of their ability to predict proportions of choices in two complex judgment experiments. In both experiments the Bradley-Terry-Luce model gave better predictions, suggesting that in some situations this model may be more appropriate and yield more meaningful scale values than the law of comparative judgment. Situations where this model is likely to be more appropriate are those in which the discriminial dispersion is proportional to the mean scale value.

- 12:20. A computer application of a completely general univariate and multivariate analysis of variance. R. DARRELL BOCK, *University of North Carolina*.

For computer applications an especially suitable method of performing analysis of variance makes use of precomputed solution matrices. These matrices can be derived for any design, whether complete, incomplete, balanced, or unbalanced. Thus the computer can command an indefinitely large library of solutions in tape storage. Since the same matrices solve both univariate and multivariate problems, the program can be easily extended to the multivariate case. Criteria for multivariate statistical tests are discussed, and an application of the analysis to a four-variate,  $2 \times 3$  design in a study of school achievement is presented.

- 12:30. A model for heterogeneous contingency tables. J. E. KEITH SMITH, *Massachusetts Institute of Technology*.

The current analysis of contingency tables assumes that the observations are drawn independently from a fixed multinomial distribution. If however the parameters of the distribution vary, the chi square statistic is inflated yielding significance too often. A model is proposed taking into account parameter variation, if present, and allowing tests of the mean parameters. The solution presented is to replicate

the contingency table and use the chi square measure of replicate variation as the denominator in an  $F$  test. It is noted that the sample sizes needed for use of the  $F$  test are larger than those for the chi square test since each replicate cell must have a reasonable expectation.

#### Division 19. Summarized Research Papers

12:00-12:50. Burgundy Room, Morrison

PHILIP I. SPERLING, *Office of the Surgeon General, Department of the Army*, Chairman

- 12:00. Level of blood sugar as an indicator of psychological stress. JOHN MENDENHALL, *Aerospace Medical Laboratory*.

Reports conflict regarding the validity of blood sugar changes as an index of reaction to stress. Failure to control food intake may account for conflicting evidence. This study tests the hypothesis that there will be a significant rise in blood sugar in mental patients subjected to experimentally produced psychological stress. Ten mental patients were given stress interviews utilizing frustrating psychological tests. Blood samples were drawn before stress, after 30 minutes of stress, and after 30 minutes of taking easy tests. Uniformly, the level of blood sugar rose significantly following stress testing and dropped following success testing.

- 12:05. Information processing under overload conditions. EDITH S. JAY AND ROBERT L. MCCORNACK, *System Development Corporation*.

When a system (defined as a non-face-to-face-group) processes information, the output will be a nonlinear function of input. The system theory of J. G. Miller hypothesizes that as input increases the output will increase linearly up to a point and then remain steady. When input increases enough to overload the system, output will finally decrease. This hypothesis was tested by using three three-man systems processing messages under four input conditions. Output was the number of correct messages per unit time. Results were essentially in keeping with Miller's prediction, although no large decrease appeared.

- 12:10. New instruments for screening Army input. A. G. BAYROFF, E. F. FUCHS, AND L. C. SEELEY, *Personnel Research Branch, Department of the Army*.

New forms of the Armed Forces Qualification Test have been developed for screening input to all the Services. Item selection and standardization were based on separate mobilization samples of all the

Services. The forms were highly correlated with each other ( $r = .94$ ) and with the reference tests ( $r = .86$  to  $.90$ ). The Army has been screening marginal passers on the basis of aptitude area scores derived from the Army Classification Battery (ACB). A briefer battery, the Army Qualification Battery (AQB), has been developed for this purpose. Correlations between aptitude area scores derived from the two batteries were substantial ( $r = .79$  to  $.91$ ).

12:15. Application of the hierarchical factor model to the criterion grouping problem. ERNEST C. TUPES, LELAND D. BROKAW, AND MARGORIE KAPLAN, *Personnel Laboratory, Lackland Air Force Base, Texas.*

A hierarchical factor analysis was carried out on the intercorrelations among 66 Air Force technical training schools. A general factor, two second-order, and four third-order factors were obtained: the general factor apparently being the contribution of general intelligence to technical school performance, the second-order factors representing a mechanical-clerical dichotomy, and the third-order factors representing four of the five aptitude composites derived from the Airman Classification Battery. It was concluded that the hierarchical solution is satisfactory for this type of data and that the present training assignment categories were reasonably satisfactory.

12:20. A limited language for obtaining combat information from prisoners of war: A pilot study. RICHARD I. MOREN AND EUGENE H. ROCKLYN, *Human Resources Research Office.*

In order for combat troops to obtain perishable tactical information from newly captured prisoners of war, knowledge of the enemy language is necessary. A limited language model or prototype to be used specifically for obtaining tactical information from newly captured prisoners of war was constructed in English. An equivalent Russian version was made, and students learned the English-Russian limited language in 20 days. In a simulated POW situation they questioned Russian-speaking personnel and were able to obtain information which could have been of value in actual combat, thus demonstrating the feasibility of the model in the Slavic language family.

12:25. A follow-up study of experimentally trained and conventionally trained field radio repairmen. ROBERT VINEBERG AND GEORGE BROWN, *Human Resources Research Office.*

An experimental course strongly oriented towards the performance of the job in the field and embodying the application of an instructional method termed

Functional Context Training was developed for Army radio repairmen. The end of course proficiency test battery was readministered to graduates of the experimental and standard course after they had been in the field an average of nine months. The superiority of the experimental group which had existed at the time of graduation had largely disappeared. Initial high proficiency of the experimental group was not sustained under conditions of minimal exposure to relevant job activities.

12:30. Inducing and measuring postural disorientation in flight. NORMAN E. FREEBERG, *General Precision, Inc., Binghamton, New York.*

This study of postural disorientation ("aviator's vertigo") represents an effort to determine whether it can be systematically induced in military aviators, whether its effects can be measured reliably, and whether its severity is related to flying experience. An in-flight maneuver designed to induce postural disorientation resulted in this effect upon 15 of 28 Navy aviators. Self-ratings of disorientation correlated significantly with instructor estimates. Subjects of lower military rank tended to incur significantly more disorientation. The degree of disorientation produced with propeller versus jet aircraft did not differ significantly. Training implications are discussed.

12:35. Some problems in the use of a teaching machine for Air Force on-the-job training. SYLVIA R. MAYER, *Air Force Cambridge Research Center, Bedford, Massachusetts.*

A teaching machine was used at a SAGE System direction center in a 16-month study. Data were collected on problems concerned with the ability of the device to handle unsupervised training, the effectiveness of the teaching machine compared with handbook presentations, the administrative considerations associated with use of the teaching machine, crew use of the teaching machine as a function of its time at the site, and the generation of specifications for more advanced teaching machines for the SAGE System. Voluntary use of the teaching machine increased over time as long as new programs were presented.

#### Division 1. Symposium: South of the Reticular Formation: A Reconsideration of Spinal Sensory Processes

1:00-2:50. Venetian Room, Morrison

JOHN PAUL NAFF, *Florida State University,*  
Chairman

## Participants (by invitation):

JERZY ROSE, *Johns Hopkins University School of Medicine*. The possibility of continuous growth of central neurons.

PATRICK WALL, *Massachusetts Institute of Technology*. Response of cord and medulla cells to skin stimulation.

P. P. LELE, *Massachusetts General Hospital*. Cutaneous sensibility: The peripheral neuron.

RONALD MELZACK, *Massachusetts Institute of Technology*. Spots, specificity, and von Frey.

## Division 3. Fear in Animal Learning

1:00-1:50. Cotillion Room, Morrison

ABRAM AMSEL, *University of Toronto*, Chairman

1:00. Retention of learned fear in rats of different ages. BYRON A. CAMPBELL, *Princeton University*.

Rats of five different ages (18, 23, 38, 54, and 100 days) were given 30 brief unescapable shocks in one side of a typical black-white learned fear apparatus. Separate groups of rats at each age level were tested 0, 7, 21, and 42 days after the shock for their relative avoidance of the side of the cage in which they were shocked. Retention of fear was found to be inversely related to the age of the rat. Rats shocked at 18 days, for example, showed little retention of fear 7 days later, while adult rats showed perfect retention at all intervals.

1:10. The effect of punishment introduced early in learning. EILEEN B. KARSH, *University of Pennsylvania*.

Hungry rats were trained to run down a straight alley to get food. Different groups were given food and weak or strong shock after 5, 10, or 30 rewarded training trials. The difference in running speed due to training did not affect resistance to shock. There appeared to be a level of running speed associated with each shock intensity. Animals that had initially exceeded this level declined, while animals that had been below it increased their speed, even under strong shock. This experiment which introduced shock during the early stages of learning confirmed and extended the results of previous studies.

1:20. The retrograde effect of ether anesthesia on a conditioned avoidance response in mice. WALTER B. ESSMAN and MURRAY E. JARVIK, *Albert Einstein College of Medicine*.

To test the hypothesis that ether anesthesia reduces the retention of a conditioned avoidance response, a group of mice were anesthetized with this agent immediately after stepping onto an electrified shelf. Another experimental group, while not etherized, was shocked. Two control groups were tested on the apparatus without electric shock; one of these control groups was etherized immediately upon being removed from the apparatus. Analysis of response latencies 24 hours following training demonstrated that anesthesia following electric shock diminishes, but does not eliminate, the inhibiting effect of the shock.

1:30. The effect of delay-in-reinforcement, UCS duration, CS-UCS onset interval, and *N* on conditioned fear response. ANDREW STROUTHESE, *Temple University*.

Does delay-in-reinforcement affect conditioning of autonomic Rs as it does that of motor Rs? Using 120 rats in two 3 × 3 factorial designs this and other variables were investigated. Delays of .55", 1.10", and 2.20" and *N*s of 8, 16, and 32 were used in both studies. The .25"-UCS duration was constant in I, whereas in II the .30"-interval was constant. Effects were measured in terms of running speed to G in a runway into which the CS was introduced as obstruction. Fear strength and delay-in-reinforcement were inversely related, a finding not supporting the two-process theory. Other factors were not significant.

## Division 3. Speech and Audition

1:00-1:50. Parlor B, Morrison

IRA J. HIRSH, *Central Institute for the Deaf*, Chairman

1:00. A vector model for the combination of cues in the perception of speech sounds. HOWARD S. HOFFMAN, *Pennsylvania State University*.

Previous research involving synthetic speech reveals that burst frequency as well as the second- and third-formant transitions serve as cues for the distinctions among [b], [d], and [g]. The model accounts for the effects of combining these cues within the same sound. It assumes that cues act as vectors within a multidimensional response space and that, when cues are combined, their effects add vectorially. New data were collected to provide a quantitative test of the model and to assess differences in the way individuals used the cues. The model described the data well and revealed major differences among individuals.



- 1:10. An analysis of confusions in speech production. BELVER C. GRIFFITH, *Edward R. Johnstone Training and Research Center, Bordentown, New Jersey.*

Miller and Nicely found that listeners confuse speech sounds played against noise with sounds similar in articulation. Their results showed that articulation dimensions varied greatly in their resistance to being misperceived. The present study is a parallel analysis of confusions in speech production within a population (mental retardates) known to be poor articulators. Again, confusions involved substituting sounds of similar articulation. Also, the ordering of articulation dimensions as to resistance to distortion was the same in production as found in perception. A separate analysis revealed that this order of dimensions in speech production reflects the deterioration of particular response segments in the poor articulator.

- 1:20. An auditory analogue of the visual reversible figure. RICHARD M. WARREN, *National Institute of Mental Health.*

If a loop of tape plays a clearly pronounced word over and over, it seems to shift suddenly to another word. This "verbal transformation effect" continues at frequent intervals during continued stimulation, sometimes to a new form, sometimes to one already reported. The illusion was found for all stimuli used: from a word with two speech sounds to complete sentences. Quantitative measures were obtained of the effect of stimulus complexity, loudness, masking noise, and repetition rate. Transitions frequently involved a very great degree of phonetic distortions and often exhibited semantic consistency.

- 1:30. The magnitude of context effects for auditory intensity in the multiple-standards experiment. COLIN G. McDIARMID AND WILLIAM E. KAPPAUF, *University of Illinois.*

PSEs for tones of 54, 66, 78 and 90 db. intensity were determined by the up-and-down method for 10 male subjects under the traditional single-standard condition and under the multiple-standards condition. Given the context of the wide range of stimuli in the multiple-standards case, the PSE for the 54 db. standard increased more than 4 db. (as much as 8 to 10 db. for some subjects), while the PSE for the 90 db. standard decreased more than 1.5 db. Thus, the context effect for auditory intensity is large, most of it occurring at the low end of the log. intensity range.

#### Division 5. Symposium: Current Views of Reliability

1:00-2:50. Crystal Room, Sherman

DONALD W. FISKE, *University of Chicago*, Chairman

##### Participants:

FREDERIC M. LORD, *Educational Testing Service.* The forest and some trees.

ARDIE LUBIN, *Walter Reed Army Institute of Research.* Is reliability necessary?

ROBERT TRYON, *University of California.* Reliable perceptual dimensions of individual differences by cluster analysis vs. underlying multidimensional psychophysical scales.

Discussant: JANE LOEVINGER, *St. Louis Jewish Hospital.*

#### Division 5. Symposium: The Objective Life History Variable in Psychological Research

1:00-2:50. Jade Room, Sherman

WILLIAM A. OWENS, *Purdue University*, Chairman

##### Participants:

LEONA E. TYLER, *University of Oregon.* Theoretical orientation to the use of the life history.

JOHN T. DAILEY, *American Institute for Research.* Utility of the life history to date.

LINDSEY R. HARMON, *National Research Council.* Facilitating the analysis of life history data.

ROBERT PERLOFF, *Purdue University.* Prospects for future applications of the life history variable.

#### Division 19. Symposium: A Challenge to Military Psychology: The Character and Behavior Disorders

1:00-2:50. Grand Ballroom, Morrison

WILLIAM A. HUNT, *Northwestern University*, Chairman

##### Participants:

JOHN E. RASMUSSEN, *United States Naval Medical Research Institute, Maryland.* Is there an adequate theoretical framework from which the concept of character and behavior disorders may be deduced.

ROBERT S. HERRMAN, *United States Naval Bureau of Medicine and Surgery.* The significance to the military of character and behavior disorders.

WALTER L. WILKINS, *United States Naval Medical Neuropsychiatric Research Unit.* The identification of a character and behavior disorder.

JOHN H. ROHRER, *Georgetown University School of Medicine*. The forgotten field of personality research: The character and behavior disorders. Discussants: RICHARD TRUMBULL, *Physiological Psychology Branch, Office of Naval Research*; MAX W. LUND, *Engineering Psychology Branch, Office of Naval Research*; AND H. B. MOLISH, *United States Naval Medical Research Laboratory*.

### Division 3. Visual Psychophysics I

2:00-2:50. Cotillion Room, Morrison

MILTON A. WHITCOMB, *National Academy of Sciences*, Chairman

2:00. The effects of chromatic pre-exposure upon dark adaptation of the human electroretinogram. WILLIAM R. BIEDSDORF AND JOHN C. ARMINGTON, *Walter Reed Army Institute of Research*.

The spectral sensitivity of the electroretinogram was investigated during the first two minutes of dark adaptation. Colored high luminance pre-exposures were employed. The electroretinograms were recorded in response to brief chromatic test flashes once every second. The spectral sensitivity of the ERG increased more rapidly during dark adaptation at 500 mu. than in other parts of the spectrum. Selective effects were found in various portions of the spectrum depending upon the color of pre-exposure. Analysis suggested at least two photopic processes in addition to the scotopic peak.

2:10. The effect of viewing a pulsing light on human visual flicker discrimination. SADA O SUGIYAMA AND MATHEW ALPERN, *University of Michigan*.

If (as has been proposed) human critical flicker frequency (CFF) is determined by the kinetics of photochemical reactions in the photoreceptors, one should not be able to distinguish between a light pulsating at a rate above the CFF and a steady light of the same (Talbot) luminance. While two such lights look exactly alike, one can, in fact, differentiate between them. Viewing a light which pulses above the CFF significantly elevates, and below the CFF significantly depresses, subsequent CFF measurements. Looking at a steady light of the same luminance for the same length of time has little, if any, effect.

2:20. The effect of stimulus duration on the critical threshold of flicker fusion under several conditions. M. J. MARCUS AND CARNEY LANDIS, *IBM, Owego, New York, and New York State Psychiatric Institute*.

The effect of stimulus duration (number of flashes at a given frequency) on CFF was studied under several conditions of area, luminance, and color. Observers made judgments of flicker or fusion as stimulus duration was varied (holding rates of frequency constant). At each condition this was repeated for the frequencies where stimulus duration of the train of flashes remained a determinant of CFF. Generally, the plot of CFF vs. Number of Flashes was a rising function of negatively accelerated slope. As luminance was lowered, stimulus duration was a decreasing determinant of CFF, forming a straight line relationship for foveal white light (Log I). Two hypotheses are offered to account for the findings.

### Divisions 1 and 3. Symposium: Evocation Mechanisms of Genetic Potentialities in Behavior

3:00-4:50. Venetian Room, Morrison

SHERMAN ROSS, *APA Central Office*, Chairman

#### Participants:

BEATRICE T. GELBER, *University of Chicago*. The genetic material and capacity for modification of behavior.

AUSTIN H. RIESEN, *University of Chicago*. The role of stimulation in the growth and maintenance of the central neural elements.

ERNST W. CASPARI, *Wesleyan University*. Mechanisms of the genetic control of animal behavior.

BENSON E. GINSBURG, *University of Chicago*. Genetic control of the ontogeny of stress behavior.

### Division 3. Visual Psychophysics II

3:00-3:50. Cotillion Room, Morrison

WILLIAM R. UTTAL, *IBM Research Center*, Chairman

3:00. Retention and interocular transfer of intensity discriminations in dark-reared kittens after ablation of visual cortex. LOUIS AARONS, HISAKO KITSUI, AND AUSTIN H. RIESEN, *Northwestern University School of Medicine and University of Chicago*.

Although visually deprived kittens are retarded in learning and fail to show ocular equivalence for monocular form and movement discriminations, they readily learn intensity discriminations and exhibit prompt interocular transfer of the habit. Kittens reared in total darkness, as well as in the lighted laboratory, lost the intensity discrimination habit after ablation of visual cortex. Animals from both

groups, after relearning, showed prompt interocular transfer. Unoperated controls also showed immediate transfer. We conclude that visual intensity discriminations show interocular equivalence at both cortical and subcortical levels when learned monocularly by kittens without any prior light experience through the test eye.

- 3:10. Temporal aspects of retinal inhibitory interaction. FLOYD RATLIFF, *Rockefeller Institute, New York.*

Inhibitory interaction among neural elements in the compound eye of *Limulus* was analyzed quantitatively. Optic nerve activity, generated by various temporal and spatial patterns of light, was recorded from two or more nerve fibers simultaneously. By taking account of the time required for each ommatidium to exert inhibitory influences on the others, an earlier quantitative description of steady state inhibitory interaction has been extended to include transient phenomena. For the simple temporal patterns considered thus far, analog computer solutions of the theoretical equations agree qualitatively with experimental observations. Oscillations resulting from the inhibitory interaction resemble "Charpentier's bands" in human vision.

- 3:20. Centrifugal effects on the electroretinogram of the frog. STEPHEN T. KITAI, *Wayne State University.* (Sponsor, Jack Werboff)

The effects of nembutal on the ERG responses under various conditions are reported. Under spinal pithing condition, with the optic nerves intact, depression of the ERG response occurred with nembutal injection. Unilateral sectioning of the optic nerve or unilateral removal of the optic lobe abolished the effect of the nembutal on the ERG response. These phenomena are interpreted as evidence for the existence of centrifugal fibers in the optic nerve. The relation between the physiological state of the higher centers and retinal activities is discussed.

- 3:30. Dark adaptation in the robin (*Turdus migratorius*). HELMUT E. ADLER, *American Museum of Natural History.*

Luminance thresholds were obtained on two robins following preadaptation to 0 min., 5 min., 10 min., 15 min., and 20 min. of white light at 60 m.L. Under the operant conditioning technique used, the birds controlled their own stimulus intensities and were

reinforced in such a way as to keep the stimulus oscillating around their threshold. Preadaptation resulted in dark adaptation curves which showed a prolonged cone segment and a rod segment which did not reach final level at 90 min. in the dark. The duration of pre-exposure, slope of the curve, and time to reach final level are discussed. Robin curves are compared with starling and pigeon.

#### Division 5. Symposium: Standard Scores for Aptitude and Achievement Tests

3:00-4:50. Jade Room, Sherman

ALEXANDER G. WESMAN, *Psychological Corporation,*  
Chairman

##### Participants:

ERIC F. GARDNER, *Syracuse University.* Normative standard scores.

ROBERT L. EBEL, *Educational Testing Service.* Content standard scores.

WILLIAM H. ANGOFF, *Educational Testing Service.* Standard score scales with nonmeaningful origins and units.

Discussant: JOHN C. FLANAGAN, *American Institute for Research.*

#### Division 5 and Psychometric Society. Symposium: Selection of Variables for Factor Analysis

3:00-4:50. Crystal Room, Sherman

JOHN W. FRENCH, *Educational Testing Service,*  
Chairman

##### Participants:

J. P. GUILFORD, *University of Southern California.* Some general principles for sampling variables in factor analysis.

EDWIN A. FLEISHMAN, *Yale University.* A research strategy using factor analysis in programmatic research.

RAYMOND B. CATTELL, *University of Illinois.* Selection of variables to elicit significant personality factors.

BENJAMIN FRUCHTER, *University of Texas.* Some factor analytic designs based on reference batteries.

HAROLD P. BECHTOLDT, *State University of Iowa.* Using factors as dependent and as independent variables.

## BUSINESS MEETINGS, PRESIDENTIAL ADDRESSES, AND SOCIAL FUNCTIONS

### TUESDAY, AUGUST 30

#### Division 9 Administrative Committee of SPSSI Council. Meeting

9:00-4:50. Moby Dick, Sherman

### WEDNESDAY, AUGUST 31

#### Division 9 SPSSI Council. Meeting

9:00-4:50. Moby Dick, Sherman

### THURSDAY, SEPTEMBER 1

#### American Board of Examiners in Professional Psychology. Meeting of ABEPP Diplomates Concerning the Board's Examination and Evaluative Procedures

9:00-10:50. Suite 427-9-32, Morrison

NOBLE H. KELLEY, *Southern Illinois University*,  
Chairman

#### Division 16 Board. Preconvention Meeting

9:00-10:50. Burgundy Room, Morrison

THELMA G. VOORHIS, *Pinnellas County, Florida*,  
Chairman

#### American Board of Examiners in Professional Psychology. Open House for Prospective Candidates, Candidates, Diplomates, and In- terested Psychologists

10:00-12:00. Suite 440, Morrison

Copies of printed information will be available on re-  
quirements for candidacy, policies and procedures on ex-  
aminations, and general information on the work  
and functioning of ABEPP.

#### Division 12 Membership Committee. Meeting

1:00-1:50. Life Room, Sherman

WENDELL E. CARLSON, *VA Area Medical Office*,  
*San Francisco*, Chairman

#### American Board of Examiners in Professional Psychology. Open House for Prospective Candidates, Candidates, Diplomates, and In- terested Psychologists

2:00-4:00. Suite 440, Morrison

#### Division 16. Business Meeting and Presidential Address

2:00-4:50. Grand Ballroom, Morrison

THELMA G. VOORHIS, *Pinnellas County, Florida*. An  
Experiment in the Early Identification of Emotion-  
ally Disturbed Children.

#### Division 7. Business Meeting and Presidential Address

4:00-5:50. Constitution Room, Morrison

PAULINE S. SEARS, *Stanford University*. Pursuit of  
Self-Esteem: The Middle Childhood Years.

#### Division 13. Business Meeting and Presidential Address

4:00-5:50. Bal Parlors, Sherman

EDWIN R. HENRY, *Standard Oil Company of New  
Jersey*.

#### APA Board of Professional Affairs. Meeting

5:00-7:00. Walnut Room, Morrison

M. C. LANGHORNE, *Trinity College*, Chairman

#### Division 16. Social Hour

5:00-5:50. Ridibunda Lounge, Bal Tabarin, Sher-  
man

#### Division 7. Social Hour

6:00-6:50. Ridibunda Lounge, Bal Tabarin, Sher-  
man.

#### Division 17 Executive Committee. Meeting

7:00. Parlor G, Morrison

#### Division 22 Executive Council. Meeting

7:00-8:50. Byfield Bar and Grill, Sherman

#### Division 12 Outgoing Executive Committee. Meeting

8:00-10:50. Life Room, Sherman

E. LOWELL KELLY, *University of Michigan*,  
Chairman

#### Division 16 Board. Postconvention Meeting

9:00-9:50. Burgundy Room, Morrison

THELMA G. VOORHIS, *Pinnellas County, Florida*,  
Chairman



**FRIDAY, SEPTEMBER 2****APA Committee on Mental Health Research and Programs. Meeting**

9:00-11:50. Life Room, Sherman

ARTHUR J. BINDMAN, *Massachusetts Department of Mental Health*, Chairman**APA Council of Representatives. First Session**

9:00-4:50. Bernard Shaw Room, Sherman

**American Board of Examiners in Professional Psychology. Open House for Prospective Candidates, Candidates, Diplomates, and Interested Psychologists**

10:00-12:00, 2:00-4:00. Suite 440, Morrison

**Division 8. Business Meeting and Presidential Address**

4:00-5:50. Old Chicago Room, Sherman

ROSS STAGNER, *Wayne State University*. Personality Dynamics and Social Conflict.**Division 12 Program Committee (1961). Meeting**

4:00-5:50. Life Room, Sherman

**Division 18. Business Meeting**

4:00-5:50. Parlor G, Morrison

CECIL P. PECK, *Veterans Administration*, Chairman**Division 20. Business Meeting**

4:00-5:50. Walnut Room, Morrison

**Division 22. Business Meeting and Presidential Address**

4:00-5:50. Emerald Room, Sherman

LEE MEYERSON, *University of Houston*.**Division 20. Social Hour, Dinner, and Presidential Address**

6:00-8:50. Hollywood Room, Morrison

ROBERT J. HAVIGHURST, *University of Chicago*. Successful Aging.**Division 22. Social Hour and Dinner**

6:00. Crystal Room, Sherman

**Division 12. Business Meeting and Presidential Address**

8:00-10:50. Grand Ballroom, Sherman

E. LOWELL KELLY, *University of Michigan*. Clinical Psychology in 1960.**Division 15 Executive Committee. Meeting**

8:00-10:00. Parlor E, Morrison

**SATURDAY, SEPTEMBER 3****American Board of Examiners in Professional Psychology. Open House for Prospective Candidates, Candidates, Diplomates, and Interested Psychologists**

10:00-12:00. Suite 440, Morrison

**Psi Chi Council. Meeting**

1:00-2:50. Parlor F, Morrison

**American Board of Examiners in Professional Psychology. Open House for Prospective Candidates, Candidates, Diplomates, and Interested Psychologists**

2:00-4:00. Suite 440, Morrison

**Division 12 Incoming Executive Committee. Meeting**

2:00-3:50. Life Room, Sherman

NICHOLAS HOBBS, *George Peabody College for Teachers*, Chairman**APA Committee on Evaluation. Meeting**

3:00-4:50. Byfield Bar and Grill, Sherman

RALPH W. HEINE, *University of Chicago*, Chairman**Psi Chi. Business Meeting**

3:00-3:50. Walnut Room, Morrison

**APA. Coffee Hour for Visitors from Abroad**

4:00-4:50. Embassy Room, Morrison

**Division 15. Business Meeting and Presidential Address**

4:00-5:50. Hollywood Room, Morrison

DAVID G. RYANS, *University of Texas*. The Visage of Educational Psychology.**Division 17. Presidential Address and Business Meeting**

4:00-5:50. Grand Ballroom, Morrison

LEONA E. TYLER, *University of Oregon*. The Realm of Choice.**Division 22 Executive Council. Meeting**

4:00-5:50. Life Room, Sherman

**Psi Chi. Coffee Hour**

4:00-4:50. Parlor F, Morrison

**Division 2. Coffee Hour and Informal Discussion of Divisional Aims**

5:00-6:50. Parlor C, Morrison

**Division 12. Social Hour**

5:00-6:50. Ridibunda Lounge, Bal Tabarin, Sherman

**Division 15. Social Hour**

6:00-6:50. Ridibunda Lounge, Bal Tabarin, Sherman

**Division 17. Social Hour for Members and Interested Nonmembers**

6:00-6:50. Ridibunda Lounge, Bal Tabarin, Sherman

**MONDAY, SEPTEMBER 5****APA Committee on Accident and Health Insurance. Meeting**

9:00-11:50. Life Room, Sherman

PAUL W. THAYER, *Life Insurance Agency Management Association*, Chairman**Division 3 Executive Committee. Meeting**

9:00-10:50. Parlor E, Morrison

**APA and Division Incoming and Outgoing Convention Program Committee Chairmen. Meeting**

11:00-12:50. Parlor C, Morrison

**Division 2. Presidential Address and Business Meeting**

11:00-12:50. Cotillion Room, Morrison

EDWARD JOSEPH SHOEN, JR., *Teachers College, Columbia University*. Of Intellect and Understanding.**Division 5. Presidential Address**

11:00-11:50. Grand Ballroom, Sherman

ALLEN L. EDWARDS, *University of Washington*. Social Desirability or Acquiescence in the MMPI? A Case Study with the SD Scale.**Regional Association Presidents and Secretaries. Meeting**

11:00-11:50. Parlor E, Morrison

M. C. LANGHORNE, *Trinity College*, Chairman**APA Board of Scientific Affairs. Luncheon Meeting**

12:00-1:50. Parlor G, Morrison

PAUL M. FITTS, *University of Michigan*, Chairman**Division 5 Executive Committee. Meeting**

1:00-2:50. Moby Dick Room, Sherman

ALLEN L. EDWARDS, *University of Washington*, Chairman**APA. Reception for Psychologists' Wives and Guests**

3:00-5:50. Grand Ballroom, Morrison

**APA Education and Training Board. Meeting for the Chairmen of Departments Offering Graduate Training Programs in Psychology**

3:00-4:50. Suite 440, Morrison

HAROLD SCHLOSBERG, *Brown University*, Chairman**Division 1. Presidential Address and Business Meeting**

3:00-4:50. Room 427-9-32, Morrison

W. C. H. PRENTICE, *Swarthmore College*.

**Division 14. Business Meeting and Presidential Address**

3:00-4:50. Bernard Shaw Room, Sherman

ERWIN K. TAYLOR, *Personnel Research and Development Corporation*. The Organization of the People Function.**Division 21. Presidential Address**

3:00-3:50. Constitution Room, Morrison

ALPHONSE CHAPANIS, *Johns Hopkins University*. Men, Machines, and Models.**Division 5. Business Meeting**

4:00-4:50. Ruby Room, Sherman

**Division 10. Presidential Address and Business Meeting**

4:00-4:50. Gold Room, Sherman

LEONARD CARMICHAEL, *Smithsonian Institution*. Play in Animals and Men in Relation to Esthetic Theory.**Division 19. Business Meeting and Franklyn V. Taylor Commemorative Address**

4:00-5:50. Constitution Room, Morrison

LEONARD C. MEAD, *Tufts University*.**Division 21. Business Meeting**

4:00-4:50. Embassy Room, Morrison

WALTER F. GREYER, *United States Air Force Aeromedical Laboratory*, Chairman**Division 2. Coffee Hour for Foreign Psychologists**

5:00-5:50. Parlor C, Morrison

**Division 3. Business Meeting and Presidential Address**

5:00-6:50. Cotillion Room, Morrison

BENTON U. UNDERWOOD, *Northwestern University*. Ten Years of Massed Practice on Distributed Practice.**Division 5 and Psychometric Society. Social Hour**

5:00. Ridibunda Lounge, Bal Tabarin, Sherman

**Division 9. Presidential Address**

5:00-5:50. Louis XVI Room, Sherman

KENNETH B. CLARK, *City College of New York*. Psychological Aspects of Desegregation: An Evaluation of Social Science Predictions.**Division 10. Social Hour**

5:00-5:50. Ridibunda Lounge, Bal Tabarin, Sherman

**Division 14. Social Hour**

5:00-6:50. Ridibunda Lounge, Bal Tabarin, Sherman

**Division 21. Social Hour**

5:00-6:00. Ridibunda Lounge, Bal Tabarin, Sherman

**Division 9. Social Hour**

6:00-6:50. Ridibunda Lounge, Bal Tabarin, Sherman

**Division 3. Social Hour**

9:00. Cotillion Room, Morrison

**TUESDAY, SEPTEMBER 6****APA Committee on Communication with High School Teachers. Meeting**

9:00-10:50. Parlor E, Morrison

ROBERT H. KNAPP, *Wesleyan University*, Chairman**APA Council of Representatives. Second Session**

9:00-4:50. Bernard Shaw Room, Sherman

**Division 3. Social Hour**

7:00. Cotillion Room, Morrison

**Division 19. Social Hour**

10:00-12:00. Ridibunda Lounge, Bal Tabarin, Sherman

## MEETINGS OF OTHER GROUPS

### MONDAY, AUGUST 29

#### Division 16. Fifth Professional Institute for School Psychologists

August 29-31. Pick-Congress Hotel

RALPH H. TINDALL, Chairman

#### The Challenge of a New Decade in School Psychology

- I. The changing role of the school psychologist and the adaptation of that role to the needs of various school systems.
- II. An approach to the learning problems of the bright, average, and retarded child through research.
- III. Disturbed and disturbing children in the public school in relationship to the school psychologist.

Section Leaders: FRANCES A. MULLEN, HERBERT J. KLAUSMEIER, AND WILLIAM C. KVARACEUS.

ROBERT HAVIGHURST will address a 6:30 dinner meeting at the Furniture Club, August 30, 1960. His subject will be "Recent Research on Character Development of Children."

### TUESDAY, AUGUST 30

#### National Institute of Mental Health. Meeting with Chief Psychologists in State Mental Health Programs

August 30-31. 9:00-4:50. Emerald Room, Sherman

For further information, write to: Jerry W. Carter, Jr., Chief Clinical Psychologist; Community Services Branch, National Institute of Mental Health, Bethesda, Maryland.

#### Veterans Administration, Department of Medicine and Surgery. Research Meeting

9:00-4:50. Burgundy Room, Morrison

For further information, write to: H. Max Houtchens; Chief, Clinical Psychology Division, Psychiatry and Neurology Service; Veterans Administration; Washington 25, D. C.

### WEDNESDAY, AUGUST 31

#### Association of State Examining Boards. Constitutional Convention

9:00-4:50. Walnut Room, Morrison

JOSEPH R. SANDERS, *New York State Department of Education*, Chairman

#### International Council of Psychologists. Meeting of the Board

9:00-4:50. Parlor A, Morrison

#### Psychometric Society. Business Meeting

9:00-9:50. Jade Room, Sherman

LLOYD HUMPHREYS, Chairman

#### United States Department of Health, Education, and Welfare; Office of Vocational Rehabilitation. Meeting

9:00-4:50. Jewish Vocational Service (One South Franklin Street, Chicago)

For further information, write to: Thomas J. Skelley, Consultant; Counseling and Placement, Office of Vocational Rehabilitation; Department of Health, Education, and Welfare; Washington 25, D. C.

#### Veterans Administration, Department of Medicine and Surgery. Research Meeting

9:00-4:50. Embassy and Burgundy Rooms, Morrison

For further information, write to: H. Max Houtchens; Chief, Clinical Psychology Division, Psychiatry and Neurology Service; Veterans Administration; Washington 25, D. C.

#### Psychometric Corporation. Business Meeting

10:00-10:50. Jade Room, Sherman

HAROLD O. GULLIKSEN, Chairman

### THURSDAY, SEPTEMBER 1

#### Psychologists in Private Practice. Meeting

1:00-10:00. Ruby Room, Sherman

For further information, write to: John Hall Jones; 326 Northeast Twenty-Sixth Street; Miami, Florida.



**Academy of Psychologists in Marital Counseling. Meeting**

2:00-4:50. Crystal Room, Sherman

For further information, write to: Lee R. Steiner; Box 183; New York 24; New York.

**American Catholic Association. Meeting**

3:00-6:30. Francis J. Lewis Center, DePaul University (25 East Jackson Boulevard, Chicago, Illinois)

For further information, write to: Virginia M. Staudt; 3206 Fairfield Avenue; New York 65, New York.

**Society for Projective Techniques. Business Meeting**

4:00-4:50. Jade Room, Sherman

**Society for Projective Techniques. Social Hour**

5:00-5:50. Ridibunda Lounge, Bal Tabarin, Sherman

**Society for Projective Techniques. Dinner and Presidential Address**

7:00-8:50. Jade Room, Sherman

GORDON F. DERNER, *Adelphi College*.

**FRIDAY, SEPTEMBER 2****International Council of Psychologists. Open Luncheon Meeting in Honor of Overseas Guests**

12:00-1:50. Promenade Room, Morrison

**International Council of Psychologists. Business Meeting**

2:00-3:50. Promenade Room, Morrison

**International Council of Psychologists. Incoming Board Meeting**

4:00-4:50. Promenade Room, Morrison

**National Council of the Churches of Christ. Meeting**

5:00-7:00. Gold Room, Sherman

**Society for the Scientific Study of Religion. Meeting and Social Hour**

5:00-6:50. Embassy Room, Morrison

Open to all interested parties. For further information, write to: James E. Dittes; Yale Divinity School; New Haven 11, Connecticut.

**SATURDAY, SEPTEMBER 3****Veterans Administration, Vocational Rehabilitation and Education. Meeting for Vocational Rehabilitation and Educational Personnel**

9:00-10:50. Parlor G, Morrison

JOSEPH SAMLER, *Veterans Administration*, Chairman

**Psychologists Interested in Organizing an APA Division of Psychotherapy. Meeting**

2:00-3:50. Bal Parlors, Sherman

For further information, write to: Arthur H. Davison, Chief Clinical Psychologist; Sonoma State Hospital; Eldridge, California.

**Association of Correctional Psychologists. Business Meeting**

4:00-5:50. Parlor E, Morrison

RAYMOND R. GILBERT, *Massachusetts State Department of Correction*, Chairman

**Psychologists Interested in Organizing an APA Division of Psychotherapy. Social Hour**

4:00-4:50. Bal Tabarin, Sherman

**MONDAY, SEPTEMBER 5****Psychometric Society Council of Directors. Meeting**

9:00-10:50. Moby Dick Room, Sherman

LLOYD G. HUMPHREYS, Chairman

**Psychometric Society. Presidential Address**

3:00-3:50. Crystal Room, Sherman

LLOYD G. HUMPHREYS. *Investigations of the Simplex*.

## CONVENTION ANNOUNCEMENTS

GEORGE S. SPEER  
Convention Manager

AND

PHILIP ASH  
Associate Convention Manager

**Time and Place:** Thursday, September 1, through Wednesday, September 7, 1960, in Chicago, Illinois. *Chicago is on Central Daylight Saving Time.* All meetings and all official APA functions, except APA Day functions, will be held in the two Headquarters Hotels: the Hotel Sherman and the Morrison Hotel. The APA Day Program will be held in the Medinah Temple, 600 North Wabash Avenue.

**Housing:** At APA request, substantial blocks of rooms have been set aside at guaranteed rates in both Headquarters Hotels. *Members should note, however, that these rates are guaranteed at the rate requested only if the Advanced Registration Form is returned prior to August 1, 1960.* After August 1, every effort will be made to assign rooms at the rate requested; but such assignment cannot be guaranteed, and it is quite unlikely that late requests can be honored. Reservations received *after* August 1 will most likely be assigned at the maximum rate given on the Advanced Registration Form for the type of accommodation requested. The Advanced Registration Form (which includes space for hotel reservations) appears at the end of these announcements.

Members and guests with special housing needs should write directly to the Housing Committee Chairman: Theodore V. Purcell; Loyola University; 6525 North Sheridan Road; Chicago 26, Illinois.

**Registration:** Members and guests are urged to register in advance to minimize delay upon arrival at the meetings, as well as to ensure guarantee of hotel space. Advanced registrants merely need to indicate their convention address prior to receiving their badge and *Convention Guide*. Complete member and nonmember registration facilities will be maintained in both Headquarters Hotels: on the Mezzanine Floor in the Sherman and on the First Floor in the Morrison. Advanced registrants as well as new registrants may register in either hotel. There is no fee for APA members, foreign affiliates, members of Psi Chi, members of the Student Journal group, or nonmembers who are participants in the official program; the fee for other nonmembers is \$3.00.

The Registration Desks in both hotels will be open on Wednesday, August 31, from 2:00 P.M. to 8:00 P.M. During the meetings, the Registration Desks will be open from 8:00 A.M. to 5:00 P.M., with the following exceptions: on APA Day, September 4, and on Wednesday, September 7, the Desks will close at 12:00 noon.

**Directory:** A directory of members and guests registered at the convention will be maintained in the Registration Area in each hotel (Mezzanine Floor in the Sherman, First Floor in the Morrison). New directory listings will be posted twice daily.

**Mail and Directory Correction:** A message bulletin board and a mailbox for leaving messages for members and guests at the convention will be available in Parlor O in the Sherman. In Parlor O, there will also be a Directory Correction Desk. Members and guests who notice errors in their directory listing are urged to complete a Correction Form to have their listing revised.

**Information Desks:** Information Desks will be maintained in the Registration Area (Mezzanine Floor in the Sherman, First Floor in the Morrison) in each hotel. Personnel will furnish information about the convention and about Chicago. In addition, *at the Information Desk in the Sherman only, a Ride Exchange File will be maintained.* Members and guests are invited to use this file to offer or solicit transportation from Chicago.

**Tickets for Luncheons, Dinners, and Other Special Events:** It will be necessary to purchase tickets for all scheduled meal functions and other ticketed special events in advance of the function. Tickets will be sold at the Special Events Desk, Registration Area, Mezzanine Floor, Sherman. Luncheon tickets must be purchased before 10:00 A.M. and dinner tickets before 3:00 P.M. on the day for which the event is scheduled.

**APA Day Buffet Lunch:** Members are urged to reserve and pay for APA Day Buffet Lunch tickets with their advanced registration (see Advanced Registration Form). Such tickets will be held in the registrant's name at the Special Events Desk. If advanced registration is not convenient, members are urged to make reservations and pick up tickets for the lunch as early as possible.

**Ball Game and Lunch:** Arrangements have been made for a special APA Excursion to Comiskey Park on Saturday, September 3, for lunch and the afternoon baseball game between the Chicago White Sox and the Detroit Tigers. Transportation has been arranged to leave the Sherman at 11:00 A.M. New facilities have been constructed at Comiskey Park for pregame picnics which afford a pleasant lunch, a fine atmosphere, and an excellent view of the playing field. A box lunch, including fried chicken, will be served at

noon. It is expected that one or more White Sox officials will be on hand to greet the group. Following lunch, the group may adjourn to *reserved* grandstand seats to watch the ball game. The total cost, including transportation to and from the Sherman, lunch, and reserved grandstand seat, is \$5.00. Only a limited number of tickets are available. Members may order tickets now from the Special Events Committee Chairman: Lee Sechrest; Department of Psychology, Northwestern University; Evanston, Illinois. *Make check payable to: APA Convention Affairs Board.* To the extent that they are not sold in advance, tickets may also be purchased at the Special Events Desk.

**Additional Luncheon and Dinner Requests:** Arrangements may still be made for food or beverage functions for special groups (APA divisions, alumni parties, special interest groups, etc.) Requests should be sent to the Associate Convention Manager as soon as possible. Functions scheduled before August can be announced in the *Convention Guide*.

**Child Care Services:** Child care service will be available from 9:00 A.M. to 5:00 P.M. each day of the convention for children between the ages of two and six inclusive. Arrangements must be *made in advance* with the Child Care Chairman. The importance of this point cannot be overemphasized, because much detailed planning is involved. The child care room will be supervised by a fully-qualified day-care teacher and an assistant. Not more than 18 children will be included in any one room at any one time. Rooms will be equipped with play equipment, nursery-type cots, etc. The charge will be 50¢ an hour for each child. Midmorning and midafternoon snacks will be provided without additional expense, but there will be a charge for any lunches that need to be furnished. Members who are interested in obtaining this service should write *immediately* to the Chairman of the Child Care Committee: Charlotte Altman; Institute for Juvenile Research; 907 South Wolcott Avenue; Chicago 12, Illinois. Baby sitters for individual children may be arranged through the management of the hotel in which the member is staying. It is suggested that requests for such service be addressed to the member's hotel well in advance of the meeting.

**Women's Activities:** Arrangements have been made for a Ladies Meeting Lounge in the American Cities Room on the Third Floor of the Morrison. This lounge will be open to women only from 9:00 A.M. to 5:00 P.M. each day (except APA Day). Coffee will be served with the compliments of the Women's Activities Committee. In addition, the following activities are planned:

**Tour of Avon Products Corporation, Morton Grove, Illinois:** This is a nationally-known cosmetics manufacturer. The tour is scheduled for Friday, September 2. Since the number of participants that can be accommodated is limited, please register as soon as possible for this event at the Women's Activities Desk, Registration Area, Mezzanine Floor, Sherman. The group will leave Chicago from in front of the Sherman (La Salle Street door) by chartered bus at 9:30 A.M.; window-shop, shop, and lunch at the Old Orchard Shopping Center; continue by bus to Avon for tour commencing at 1:45 P.M.; return to Chicago by 5:00 P.M.

**Tour of Chicago Art Institute:** Guided tour of the institute on Saturday, September 3, 2:30 P.M. to 3:30 P.M. Meet in Fullerton Hall at the Art Institute (Michigan Boulevard at Adams Street). Please register in advance for this event at the Women's Activities Desk.

**APA Reception for Psychologists' Wives and Guests:** This reception to meet the wives of the officers and directors of APA, and the wives of distinguished guests, will be held on Monday, September 5, in the Grand Ballroom of the Morrison from 3:00 P.M. to 6:00 P.M. Although this reception has been planned primarily for wives of psychologists, the Women's Activities Committee extends an open invitation to all who are interested in attending.

**APA Dance:** The APA Dance will be held on APA Day, Sunday, September 4, in the Grand Ballroom of the Sherman from 9:15 P.M. to 1:00 A.M. There is no admission charge for this event, but provision will be made for the purchase of beverages.

**Exhibits:** An unusual array of educational, informative, and entertaining exhibits, the largest number ever assembled at an APA convention, will be found in the Exhibit Hall, Mezzanine Floor, Sherman.

**Convention Lounge:** The Ridibunda Lounge, open to all members and guests, will be located in the Bal Tabarin, Sixth Floor, Sherman. The lounge and bar facilities will open at 4:00 P.M. daily. Social hours for many divisions and other groups will be scheduled in the Ridibunda Lounge.

**Placement:** The Placement Office will be located in the Third Floor Exhibit Hall, Morrison. With the exception of APA Day when the office will be closed, the Placement Office will be open from 9:00 A.M. to 5:00 P.M. daily. Applicants and employers are urged to preregister with the Placement Office. Applicants seeking employment may preregister by completing the Applicant Form which appears at the end of these announcements. Employers having position openings may preregister by completing the Position

Description Form which appears at the end of these announcements. A special publication, the *Convention Placement Bulletin*, which will include all preregistered applicants and position openings, will be available for sale in the Placement Office at a nominal charge.

**Conversation-Contact Hours:** Conversation-Contact Hours, introduced last year as a new program event, have been arranged for this convention. They are scheduled on five days of the convention between the hours of 5:00 P.M. and 6:50 P.M. For each scheduled Hour, a leader (well-known in his area of specialization) will be present to meet and chat with other psychologists. These sessions are designed especially for graduate students and other young psychologists, but are open to all. The schedule of these Conversation-Contact Hours appears in the first section of this issue.

**Convention Treasurer:** The Convention Treasurer urges divisional officers to check their financial commitments with the hotels very closely to avoid confusion with those commitments assumed by the APA Central Office or by the Convention Arrangements Committees.

**Audio-Visual Aids:** All persons who plan to use slides, films, or other audio-visual aids should communicate with: William Kulick; Institute for Psychological Services, Illinois Institute of Technology; 3329 South Federal Street; Chicago 16, Illinois. The communication should be as far in advance of the meeting as possible, even though this information has been submitted with the abstract. Please be precise in describing your needs for equipment. Authors are urged to use only  $3\frac{1}{2} \times 4$  slides, as projection cannot be guaranteed for other sizes.

**Convention Personnel:** A large convention requires the efforts of many people far in advance of and during the convention period. Each person assumes responsibility for one aspect of the convention; all work together striving to provide you with a pleasant and smoothly operating convention. You may wish to contact one or more of these people before or during the convention.

Convention Manager: GEORGE S. SPEER, *Illinois Institute of Technology*

Associate Convention Manager: PHILIP ASH, *Inland Steel Company*

Convention Program Committee: HAROLD GUETZKOW, *Northwestern University*

Convention Treasurer: WENDELL F. WOOD, *International Harvester Company*

Audio-Visual Aids: WILLIAM KULICK, *Illinois Institute of Technology*

Child Care: CHARLOTTE H. ALTMAN, *Institute for Juvenile Research*

Convention Guidebook: WILLIAM M. CANNING, *Chicago Board of Education*

Directory and Mail: THOMAS M. KENNEDY, *Loyola University*

Exhibits: MAURICE O. BURKE, *Illinois Institute of Technology*

Housing: THEODORE V. PURCELL, *Loyola University*

Information Desk: KEITH R. JEWELL, *McMurray Company*

Meeting Rooms: FRANK J. SMITH, *Sears, Roebuck*

Membership Survey: JON BENTZ, *Sears, Roebuck*

Placement Liaison: JANICE P. FISH, *APA Central Office, Washington*; and SHELDON H. WHITE, *University of Chicago*

Public Relations: MICHAEL AMRINE, *APA Central Office, Washington*; and CHARLES A. BOSWELL, *Rohrer, Hibler & Replogle*

Registration: WINFRED HILL, *Northwestern University*

Signs and Posters: JOE KAMIYA, *University of Chicago*

Special Events: LEE B. SECHREST, *Northwestern University*

Volunteer Workers: BENJAMIN BURACK, *Roosevelt University*

Women's Activities: DOROTHEA W. F. EWERS, 745 *Aberdeen Drive, Lincolnshire C. C. Estates, Crete, Illinois*

**Location of Headquarters Rooms:** Following is a list of room locations for convention activities and convention personnel in addition to the activity locations listed above in these announcements.

APA Board of Directors: *Gold Coast Room, Sherman*

APA Central Office: *Time Room, Sherman*

APA Convention Office: *Parlor L, Sherman*; and *Parlor A, Morrison*

Film Presentations: *Terrace Casino, Morrison*

Physical Facilities (Audio-Visual Aids, Meeting Rooms, Signs and Posters): *Holiday Room, Sherman*

Public Relations and Press: *Orchid Room, Sherman*  
United States Public Health Service: *Madison Room, Morrison*

Veterans Administration: *Clark Room, Morrison*

Volunteer Workers: *Parlor M, Sherman*

#### Location of Function Rooms:

##### SHERMAN

Lower Level: George Bernard Shaw

Mezzanine: Grand Ballroom, Assembly, Exhibit Halls, Parlors L-O



First Floor: Louis XVI, Crystal, Old Chicago, Jade, Emerald, Holiday, Orchid, 107, Life, Time, Gold Coast, Ruby, Gold

Third Floor: Bullfight (342)

Sixth Floor: Bal Tabarin, Bal Parlors, Byfield Bar and Grill (641), Moby Dick (639)

#### MORRISON

Lower Level: Terrace Casino

Mezzanine: Cotillion, Embassy, Burgundy, Hollywood, Promenade, Normandy

First Floor: Constitution, Grand Ballroom, Parlors A-D

Second Floor: Walnut, Venetian, Parlors E-G

Third Floor: Clark, Madison, Exhibit Hall (Placement), American Cities

Fourth Floor: Rooms 427-440.

#### MEDINAH TEMPLE

600 North Wabash Avenue

**Open Houses:** The following Open Houses have been arranged. For further information, please contact Special Events Chairman: Lee Sechrest; Department of Psychology, Northwestern University; Evanston, Illinois.

An open house will be held at the Portal House, operated by the **Chicago Committee on Alcoholism**, at which the staff will present an overview of their aims and activities. The date and time are Thursday, September 1, from 2:00 P.M. to 4:00 P.M.

An open house and conducted tour is being arranged of the facilities at the new **Illinois State Psychiatric Institute**. The open house will be on Friday, September 2, from 10:00 A.M. to 12:00 noon. Luncheon will be available in the cafeteria following the open house for those who can attend.

An open house and tour of facilities will be held at the **Institute for Juvenile Research** on Friday, September 2, from 10:00 A.M. to 12:00 noon. The staff will be glad of the opportunity to explain the nature of the institute and its functions.

An open house will be held by the **Bureau of Child Study** at its offices at 228 North La Salle Street, Room 724, Chicago Board of Education, on Friday, September 2 from 2:00-4:00 P.M.

An open house and tour is being planned jointly by the **Veterans Administration West Side Mental Hygiene Clinic and Hospital**, located at the site of the VA Regional Office. The date is Friday, September 2; and the time, 2:00 P.M. to 4:00 P.M.

**Dinners, Luncheons, and Social Hours:** The following events have been scheduled by the organizations listed:

Alumni of the **University of Kentucky** will meet for dinner at 6:00 P.M., Saturday, September 3. Alumni who are interested in attending should contact: Joan Lee, Executive Secretary; Department of Psychology, University of Kentucky; Lexington, Kentucky.

**Confederate Psychological Association** social hour and dance, Monday, September 5, 9:30 P.M. to 1:00 A.M., Louis XVI Room, Sherman.

**Sir Charles Bell Society** Dinner. Scheduled for Tuesday, September 6, 6:00-7:50 P.M., Walnut Room, Morrison. For further information, contact: Jane D. Hildreth; APA Central Office; 1333 Sixteenth Street, N.W.; Washington 6, D. C.

**Psychologists Employed Full-Time in Industry.** Social hour, Tuesday, September 6, 5:00-6:50 P.M., Century Room, La Salle Hotel.

**The 1961 APA Annual Convention:** The next convention will be in New York City. George S. Speer, of the Illinois Institute of Technology, is APA Convention Manager; Charles N. Cofer, of New York University, will be Associate Convention Manager for the New York meeting. Both may be contacted through the APA Convention Office, Parlor L, Sherman.

**Alumni of the University of Denver** social hour scheduled for Saturday, September 3, at 4:00 P.M. in the Bal Tabarin, Sherman. For further details, write to: Wilbur C. Miller; Department of Psychology, University of Denver; Denver 10, Colorado.

**Foundation for Research on Human Behavior** luncheon for member companies, Monday, September 5, 12:00-2:00 P.M. For further details, write to: Hollis W. Peter; Foundation for Research on Human Behavior; 1141 East Catherine Street; Ann Arbor, Michigan.

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A JOURNAL OF REVIEWS

July 1959

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AMERICAN PSYCHOLOGICAL ASSOCIATION, INC.  
1333 Sixteenth Street, N. W., Washington 6, D. C.

Please send a sample copy of CONTEMPORARY  
PSYCHOLOGY to:

Name.....

Address.....

## ADVANCED REGISTRATION FORM

SIXTY-EIGHTH ANNUAL CONVENTION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Chicago, Illinois, September 1-7, 1960

Please type or print:

Name: Dr. Mr. Miss Mrs. Last First Middle Initial

Professional Affiliation:  
(to appear on badge,  
maximum of 20 letters  
per line)

(Street Address)

(City)

(State)

The following information is requested for the Convention Directory:

1. Expected date of arrival: ..... Departure: .....

2. APA membership status:

Fellow ..... Member ..... Associate .....

Member, Student Journal Group ..... Foreign Affiliate ..... Member, Psi Chi .....

3. Indicate Division memberships by number(s) .....

There is no registration fee for APA Fellows, Members, Associates, Affiliates, and Members of the Student Journal Group or Psi Chi.

4. Nonmember .....

REGISTRATION FROM NONMEMBERS MUST BE ACCOMPANIED BY A REGISTRATION FEE OF \$3.00. MAKE CHECK PAYABLE TO: APA CONVENTION AFFAIRS BOARD.

The following information is requested to help plan special events and related facilities:

1. Is your spouse coming to the convention with you? Yes ..... No .....

2. Are you bringing any children with you? Yes ..... No ..... If yes, check below:

a. Number in age group:

Under 3 years ..... 3-6 years ..... 6-12 years ..... Over 12 years .....

b. Do you want day nursery child care? Yes ..... No .....

### APA DAY, SUNDAY, SEPTEMBER 4

..... I plan to attend the APA Day Buffet Lunch.

..... Please reserve ..... lunch ticket(s) for me at \$3.00 each, including tax and tip.

..... Check for \$..... enclosed for ..... lunches.

..... I do not wish a reservation for lunch.

You may register either at the Sherman or Morrison. Duplicate registration facilities will be set up and maintained throughout the convention.

### HOTEL INFORMATION

..... I do not want a hotel reservation

Headquarters will be the Sherman and Morrison Hotels. The following rates will apply in both hotels. Please indicate the hotel and type of accommodations desired:

|   |  |               |
|---|--|---------------|
| ..... Single bedrooms @ \$ 8.00         | ..... \$10.00  | ..... \$12.00 |
| ..... Double bedrooms @ 11.00           | ..... 13.00  | ..... 15.00   |
| ..... Twin bedrooms @ 14.00             | ..... 15.00  | ..... 16.00   |
| ..... Dormitory rooms @ 3.50 per person | (This rate applies only for at least four or more in a room. Please list names below.) |               |

Hotel desired: ..... Sherman ..... Morrison

NOTE: THESE RATES ARE GUARANTEED AT THE RATE REQUESTED IF THE REGISTRATION BLANK IS RETURNED PRIOR TO AUGUST 1, 1960. AFTER AUGUST 1 EVERY EFFORT WILL BE MADE TO ASSIGN ROOMS AT THE RATE REQUESTED, BUT SUCH ASSIGNMENT IS QUITE UNLIKELY, AND CANNOT BE GUARANTEED. IT IS MOST LIKELY THAT RESERVATIONS RECEIVED AFTER AUGUST 1 WILL BE ASSIGNED AT THE MAXIMUM RATE SHOWN HERE.

MEMBERS ARE URGED TO RETURN THIS FORM PROMPTLY, AND IN ANY EVENT PRIOR TO AUGUST 1, IN ORDER TO BE SURE OF RECEIVING THE ACCOMMODATIONS DESIRED.

Note: Reservations will not be held beyond 6:00 P.M. except by request. Your reservation will be confirmed.

Mail Confirmation to: .....

Address: ..... City: ..... State: .....

Room occupants: (Be sure to give the names of all occupants.)

Name (Please print) Sex Address City State

Please send this form as early as possible to:

APA Housing Bureau, Room 900, 134 North La Salle Street, Chicago 2, Illinois

(Copies of this form may be obtained from the APA Housing Bureau or from the APA Central Office.)

Advanced Registration Forms received after August 1 may not be processed for preregistration.

# **GRADUATE EDUCATION IN PSYCHOLOGY**

Report of the Conference on Graduate Education in Psychology, sponsored by the Education and Training Board of the American Psychological Association and supported by a grant from the National Institute of Mental Health, U. S. Public Health Service; held at Miami Beach, Florida, November 29 to December 7, 1958

Prepared by the Editorial Committee:

Anne Roe, *Chairman*,

and

John W. Gustad, Bruce V. Moore,  
Sherman Ross, and Marie Skodak

Price \$1.50

**THE AMERICAN PSYCHOLOGICAL ASSOCIATION**

**Dept. Grad**

**1333 Sixteenth Street, N.W.**

**Washington 6, D. C.**



# **APPLICANT FORM**

(Typewrite or print in pencil)    **APA CONVENTION PLACEMENT OFFICE**    **Applicant Number**.....

**Name:** ..... **Sex:** ..... **Age:** .....

**Convention address:** ..... **Phone:** .....

**Permanent address:** .....

**APA membership:**    Yes .....    No .....

|   |  |  |
|---|--|--|
| <b>Academic Training:</b><br><div style="border-bottom: 1px solid black; margin-top: 5px;">Degree</div> | <div style="border-bottom: 1px solid black; margin-top: 5px;">University</div> | <div style="border-bottom: 1px solid black; margin-top: 5px;">Year</div> |
| Describe pertinent work history:  |  |  |
| Number of papers presented or published:  |  |  |

**Type of position desired:** .....

**Expected salary (optional):** ..... **Preferred location:** .....

**Give a tentative schedule of the time you plan to be available in the Convention Placement Office for interviews:**

| Sept. 1 |      | Sept. 2 |      | Sept. 3 |      | Sept. 5 |      | Sept. 6 |      | Sept. 7 |      |
|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|
| A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. |

**Under which field of specialization do you wish your application to be filed?    Check no more than two boxes:**

|  |                       |
|--|-----------------------|
|  | Clinical              |
|  | Counseling            |
|  | Educational<br>School |

|  |               |
|--|---------------|
|  | Developmental |
|  | Experimental  |
|  | General       |
|  | Physiological |

|  |                   |
|--|-------------------|
|  | Human Engineering |
|  | Industrial        |
|  | Personality       |
|  | Social            |

**(Return completed form to:    Convention Placement; 1333 Sixteenth Street, N.W.; Washington 6, D. C.**  
**Copies of this form are available from this address.)**

# PSYCHOLOGY AND REHABILITATION

BEATRICE A. WRIGHT, Ph.D.  
*Editor*

Based on the proceedings of an Institute on the roles of psychology and psychologists in rehabilitation, sponsored by the American Psychological Association and supported by a grant from the Office of Vocational Rehabilitation, Department of Health, Education and Welfare.

The volume examines the principles and assumptions underlying the modern philosophy of rehabilitation, paying special attention to the roles and functions of psychologists as members of an interdisciplinary team. Problems of training are explored in detail and in the context of the changing nature of the field. Areas of needed research are highlighted.

Price \$1.50

Order from:

**American Psychological Association, Inc.**

Dept. PAR

1333 Sixteenth Street, N.W.

Washington 6, D. C.

# POSITION DESCRIPTION FORM

(Typewrite or print in pencil) APA CONVENTION PLACEMENT OFFICE Position Number.....

I. Name and Address of Employing Organization: .....

II. Position Title (include location if different from I.): .....

III. How many openings does this form cover: .....

IV. Applicant Requirements:

A. Degree: 1. PhD (EdD) ..... 2. PhD preferred, will consider Master's .....  
3. Master's ..... 4. Other .....

B. Experience:

C. Other:

Sex: Male ..... Female ..... Either ..... Age Range: .....

V. Position requirements:

A. Duties:

B. Starting Salary (depending on qualifications): Minimum ..... Maximum .....

C. Position Begins: Immediately ..... or, give date .....

VI. A. If you wish space to interview applicants, fill in the name of the interviewer and check your tentative interviewing schedule: .....

| Sept. 1 |      | Sept. 2 |      | Sept. 3 |      | Sept. 5 |      | Sept. 6 |      | Sept. 7 |      |
|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|
| A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. | A.M.    | P.M. |

B. If you have no plans for interviewing, please indicate the person to whom inquiries are to be sent: .....

VII. Check one category for listing your position:

Academic ..... Clinical and Counseling ..... Industrial and Research .....

(Return completed form to: Convention Placement; 1333 Sixteenth Street, N.W.; Washington 6, D. C. Copies of this form are available from this address.)

# RESEARCH IN PSYCHOTHERAPY

Proceedings of an interdisciplinary conference, Washington, D. C., April 9-12, 1958

ELI A. RUBINSTEIN and MORRIS B. PARLOFF, *Editors*

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Presentations and discussions by leading investigators in psychotherapy research, both psychologists and psychiatrists, combine to produce a critical evaluation of research objectives and methodologies

---

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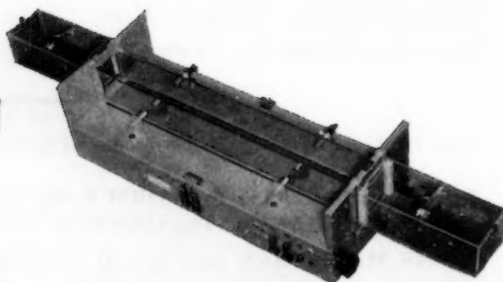
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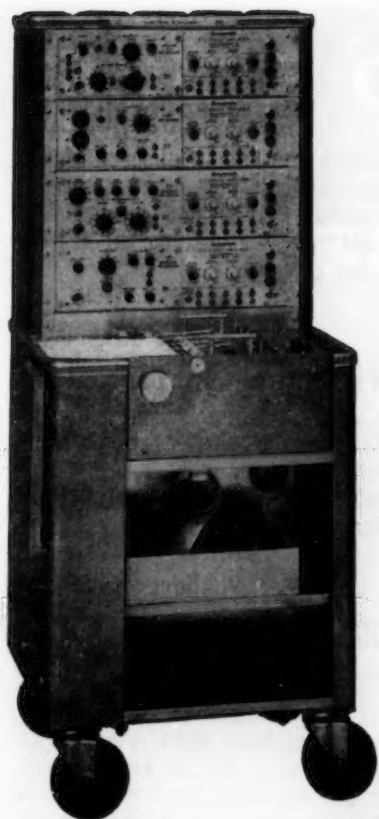
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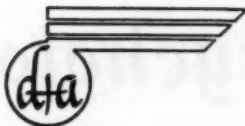


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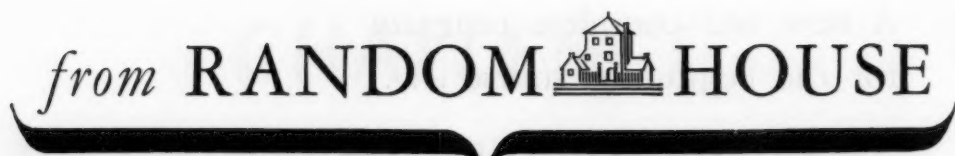
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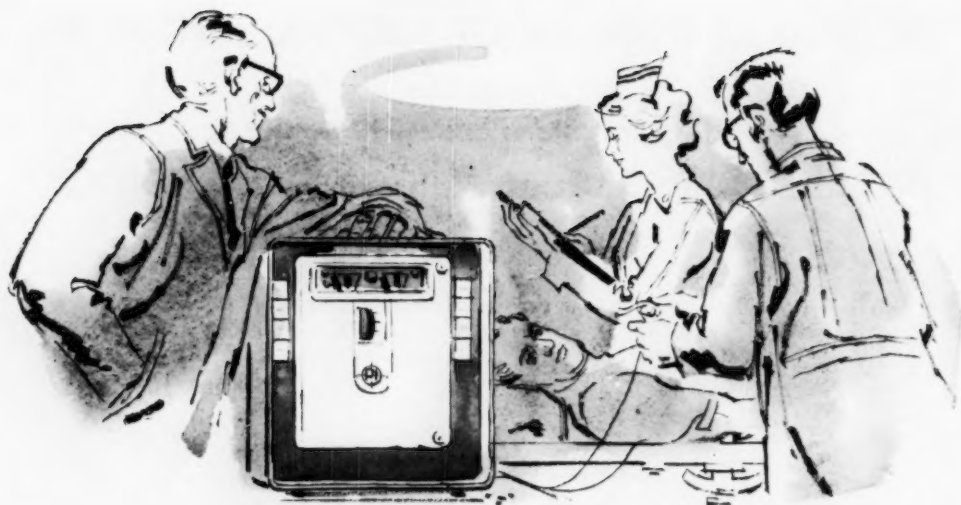
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